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GENERAL GOVERNMENT OF INDOCHINA

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INDOCHINA RICE OFFICE

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VARIETIES of RICE from TONKIN  
ACTUALLY SELECTED AND PATRONIZED

by the RICE OFFICE

in the EIGHT PROVINCES of the DELTA

---

Hanoi, Imp. G. Taupin and Cie-  
25923

Varieties of rice from Tonkin selected and patronized by the Rice Office in the eight provinces

The present opuscule is a sort of catalogue of selected varieties actually patronized by the Rice Office in Tonkin. These varieties come from a severe selection undertaken in a great number of local populations frequently cultivated. In the eight provinces of Vinh-yen, Phuc-yen, Son-tay, Bac-ninh, Bac-giang, Hai-duong, Hung-yen and Thai-binh 398 populations were gathered up (1). 621 types were separated in the interior of these populations by purification. Only 65 types are actually patronized.

The augmentation of yield being the primordial goal that the selection must aim at in Tonkin. In the choice of patronized types one kept track above all of cultural qualities proven first of all on the test fields of provincial or regional rice Stations and then controlled on the fields of collaborators from the Rice Office. . . (text unclear). The commercial quality was not neglected and was the object of studies effected at Hanoi in view of the local market and, in a certain measure, the export market.

The methods employed for the amelioration of vegetal material comprises, above and beyond the selection of local populations of the province, the system of introduction of foreign varieties to the province which had quite similar aptitudes, which permitted to obtain results truly deserving of attention. Finally, quite considerable number of lines and of mixtures of lines was obtained by pedigree selection of interesting varieties; their study is not terminated but one may hope from it a notable amelioration of the material actually patronized.

(1) Without counting the glutinous rices and the mountain rices which are the object of particular selections.

Of 65 varieties described in this catalogue, 3 are constituted by lines or mixtures of lines, 62 are of purified types:  
55 are patronized in their own province of origin

7 do not originate from the provinces where they are patronized (two of these are patronized at the same time in two different provinces).

The present catalogue is far from being definitive.

In the eight provinces previously cited, the action of the Rice Office extends in surface and in depth. Tests follow one after the other. Where the varieties patronized do not satisfy, one researches better adapted varieties. Where they have been satisfactory, one searches to replace them by types or lines still more interesting. The actual list will thus presently undergo additions and replacements.

The Rice Office is already beginning to work in Ha-dong and Nam-dinh. But the few varieties there that are actually patronized were not carried in this catalogue because they only concern surfaces of relatively little importance. The study of diverse rice zones of these two provinces is actively pursued.

Also, do not expect in this catalogue selected varieties of special interest whose pure seeds are sold, so to speak, on demand by the rice stations and whose limited culture area does not justify an active propaganda:

Rice of the X month: precocious varieties: Som gi 61ab in Bac-giang, semi-precocious Som sung 72 at Bac-giang, Gie min 696 at Bac-ninh, Gie canh 8 and 604 at Phue-yen, Gie hoa 56 at Son-tay; seasonal varieties: Tam deo 151 and Ven 250 b in diverse provinces, Tam coi 540ab in Bac-giang; late varieties Gie bun X in Bac-ninh, Hin XXI in Thai-binh and Gie nuoc Me-tri 509 in Ha-dong; perfumed varieties: Tam thom 84a in Bac-ninh, Tam thom 15 in Phuc-yen, Tam xoan XX in Thai-binh; varieties with very long grains: Saibuibao K 38, Sam deum K 36 in Son-tay and Bac-giang; rustic variety but of low commercial value: Hom 88 in Hung-yen.

Rice of the V month: somewhat precocious varieties: Chiem som 149 and Chiem ech 357 in Bac-giang; variety resistant to somewhat salty water Chiem bau 240 from Kien-an; long grain variety: Chiem di 356 at Bac-ninh.

Finally, to call attention to a variety selected by the agricultural services of Tonkin over a duration of several years: Lua Canh-Nong who has showed itself to be interesting in certain districts of the provinces of Vinh-yen, Phuc-yen, Bac-ninh, Ha-dong and Son-tay. It will be carried in the next catalogue when its

election zones will be delimited.

The more complete catalogue to follow will comprise maps of provinces where the possible extension zones of each of the patronized varieties will figure. The delimitation of these already known zones in their great lines need to be precised by semi-industrial tests.

The use of the patronized varieties brings an augmentation of the income of the rice field, from one side the fact of the increase of returns that can attain in certain cases up to 20% and which maintains itself normally in the 5 to 10%, and from the other side, the fact of the amelioration of the quality which gives to the product an added value of 5 to 10% according to the regions. The rice grower obtains thus, in utilizing the select varieties, without difficulty and without supplementary expenses, an assured and substantial benefit.

The cultural and botanical characteristics of patronized varieties were carried in the tables established by province. They are the results of observations made in the Stations in the test fields and with the collaborators.

Photographs of rice and paddy in natural grandeur allows one to appreciate the form of the grain and its transparency as much as possible.

Botanical characteristics must permit the classification of varieties and their identity.

To class the varieties in simple groups, one utilizes absolute characteristics generally of the type: presence, absence. These characteristics of classification must be ranged according to their taxonomic value to establish a rational dichotomic key. However, they do not suffice to identify the varieties. It is necessary to adjoin to it other said characteristics of "description". Certain of these are absolute but are found quite infrequently. Most of them are relative and can be utilized according to standards or principles established in advance.

The characteristics of classification utilized by the genetic laboratory of the Rice Office in Saigon are the following:

1. Starchy or gummy grain;
2. Mutic, aristate, or barbate grain;
3. Caryopsis with red or white pellicle;
4. Grain with colored or non colored glumellas;
5. Grain with black point, or without black point;
6. Grain with round form and size, 1/2 round, 1/2 long, long or very long;

7. Plant with colored or non colored sheaths;
8. Plant with colored or non colored auricles;
9. Plant with colored or non colored leaves;
10. Plant with colored or non colored internodes;
11. Plant with colored or non colored nodes;
12. Plant with colored or non colored leaf sheath articulation.

Certain authors incorporate in this list the characteristics of length of husks and form of the glume. In Tonkin all of the varieties have normal husks, except a few populations little cultivated with long sheaths and lightly colored glumellas (type Gie-canh 8) or colored (type Gie canh 604). The form of the glume in the varieties of reduced form and size of grain as is most of those of the Tonkinese delta is difficult to determine with exactitude. The great majority have a straight glume. A few imported varieties (Saibuibao K 38, Sarm daum K 36) and certain varieties of the High Region have a glume clearly bent back.

One can thus stick to the utilized characteristics in Cochin China. In addition one must remark that for the nearly totality of varieties from Tonkin and in all cases for all of the patronized varieties, the coloration of the apex is tied to that of the vegetative organs (sheaths, auricles, leaves, internodes, nodes, leaf sheath articulation). In order to simplify the table, vegetative characteristics were grouped in a single column. Besides, they are less important than the seeding characteristics, the varieties owing to be recognized according to their paddy.

The observation of the characteristics of conserved classification does not present any difficulties.

The starchy characteristic is recognizable in the relative transparency of the grain, in its behavior in boiling. The gummy rices have opaque grains (still transparent when the drying was not pushed) and give a gummy mass after boiling. The reaction to the iodine that tints the starchy grains blue and the gummy grains reddish brown is characteristic for all doubtful cases. All of the patronized varieties actually belong to the starchy group. The selection of gummy rices had its beginnings later on.

The barbate characteristic must be envisaged from an absolute point of view. If a variety presents a single grain furnished with a more or less short barb, it is said to be aristate. All of the patronized varieties are aristates. Their grains are normally mutic but a few rare grains at the summit of the panicle have a short barb. For the few varieties that have a higher percentage of aristated grains, mention of it is carried in the "characteristics of description".

The caryopsis (rice grain) of all of the patronized varieties is without color (white pellicle). The selections began uniquely with the varieties of this type (1). Certain varieties normally present a pinkish brown pellicle more or less thick, assimilated for the white pellicle classification. This characteristic is utilized for the identification even though it should be submitted quite strongly to the conditions of harvest and drying.

The coloration of the glumellas must be envisaged in the presence absence point of view, the relative coloration being utilized for the description. The paddy of one variety is said to be non colored when there is no trace of pigmentation on the glumellas. There is sometimes doubt, the pigmentation not being visible except to the magnifying glass.

The coloration of the apex (extremity of the grain) is easy to observe. For all of the patronized varieties, when the apex is pigmentated, there is the presence of anthocyanin in the vegetative organs. The normal form is the following: black violet apex, sheath lightly colored violet longitudinally at the base, coloration that is perceived better on the internal epidermis, auricle colored in light violet (transient). Coloration of the leaves is normally reduced to the simple border of the limb generally only towards the top (deep violet). For the internode, the coloration is above all visible on the part disengaged from the sheath of the leaf, under the form of longitudinal bands more or less wide and more or less deep. The coloration of the node is generally diffuse, pigments of black violet points, sometimes very slightly accentuated (fine dust visible only under the magnifying glass). Finally, the leaf sheath articulation forming two triangles opposed by the summit presents a generally uniform coloration.

The dimensions of the grains from the paddy(2) of one variety are subject to variation in a same panicle and likewise according to the conditions of the surroundings. But the length and the width vary in the same sense, their relation much more fixed can be considered as an absolute characteristic. The mensurations are made on the micrometer gauge on 100 grains or better, on 500 grains. If one puts on a graph in abscissa the length of the grains and ordered the width of it, the average dimensions are represented by a point. In the ensemble the varieties of Cochin China have forms and sizes more

(1) The populations of red rices cover quite a large area. They were not included in the selections program: the amelioration of the quality of purification is not actually interesting for these varieties of low commercial value. But the study of certain populations resistant to saltiness or to excess water was undertaken.

(2) GUTSCHIN utilizes in his classification the dimensions of caryopsis, easier to measure, the mensurations of paddy grains being subject to caution due to the fact of the presence of the glume.

more dissimilar than those of Tonkin, the area covered by these representative points on the graph is nearly double that of Tonkin. If one does not take into account the varieties of round form and size that are very little cultivated (6 to 8% only of the surfaces in culture) and depreciated on the local and foreign market (grains of very small form and size, frequent white body), the varieties of Tonkin are classed in the forms and sizes 1/2 round (10% of the cultures), 1/2 long and long (80% of the cultures). Besides this, it is necessary that the limits utilized in Cochinchina to determine this form and sizes (length on width relation: 2.25, 2.75, 3.25, and 3.75) present the great inconvenience to fall in the middle of the groups of Tonkinese varieties very near each other and giving commercial kinds of locally well known rices.

In order not to be in contradiction with the current practice, the following limits were adopted in Tonkin:

$$\frac{L}{I} < 2.40 \text{ round grain,}$$

$$\begin{aligned} 2.40 &= 2.90 \text{ grain 1/2 round,} \\ 2.90 &= 3.40 \text{ grain 1/2 long,} \\ \Rightarrow 3.40 &= \text{long grain.} \end{aligned}$$

These different characteristics (1) permits the establishment of a dichotomous key. That which is utilized by the Genetic Laboratory of Saigon comprises 15,360 cases, but certain cases are very encumbered and certain combinations are unknown. In Cochinchina, 1,815 gathered varieties occupy 88 cases, 2 cases contain 41% and 8 other cases comprise 44% of the varieties. In Tonkin, all of the patronized varieties are distributed in 6 cases.

In the tables of botanical characteristics, characteristics of description had been conveyed (1) relative to the paddy: form of the glume, length and coloration of the husks, average dimensions, pigmentations of the glumellas, ornamentation of the glumellas, relatives to the rice grains: form, thickness of tegmen, grooves, transparency, white body, and relatives to the panicle. The study of these characteristics leads to the following remarks.

The form of the glume is an important characteristic of cultural classification in Tonkin. The varieties of Spring (V month) have a very reduced glume, those of the rainy season (X month) have a more pronounced glume. The curve of the glume is a difficult characteristic to observe when it is very reduced.

The characteristics of the husk are easy to observe. The long husks are special to the varieties called Gie canh; the colored husks exist in certain populations named Hom.

(1) The study of these different characteristics is exposed in a detailed manner in the installment Archives of the Rice Office.  
---Installment 3 (1937).

DISTRIBUTION OF THE PATRONIZED VARIETIES AFTER THE DIMENSIONS OF THEIR PADDY GRAINS

GRANES DE RIZ PATRONISÉES : SCALÉE ! EXPRES LES DIMENSIONS DE LEURS GRAINS DE PADDY

Échelle : 105,1 — unité : 1/100 do mm.

LETTRE : 105,1 — unité : 1/100 do mm.  
LES NOMBRES DÉMONTRÉS SONT DES NOMBRES APPROXIMATIFS

width of paddy

310

309

308

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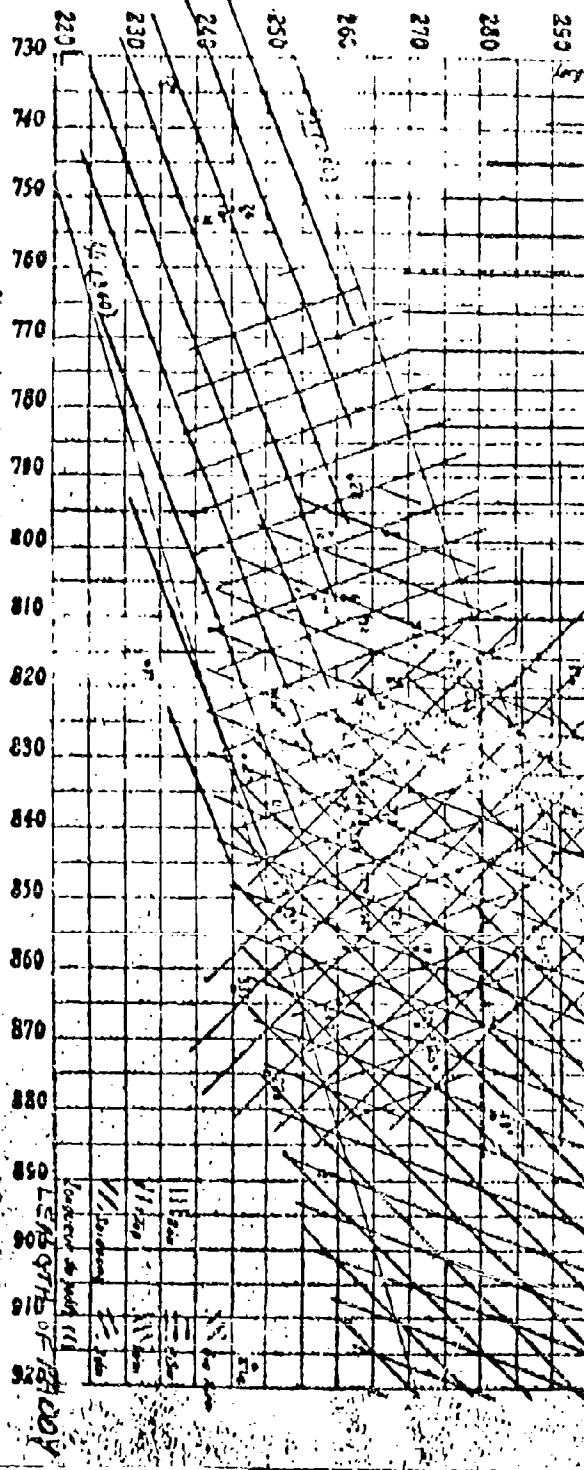
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REPRESENTATION ZONALE DES DIFFÉRENTES VARIÉTÉS PAR LEURS DIMENSIONS DE PADDY GROUPÉES SELON LEURS NOMS.

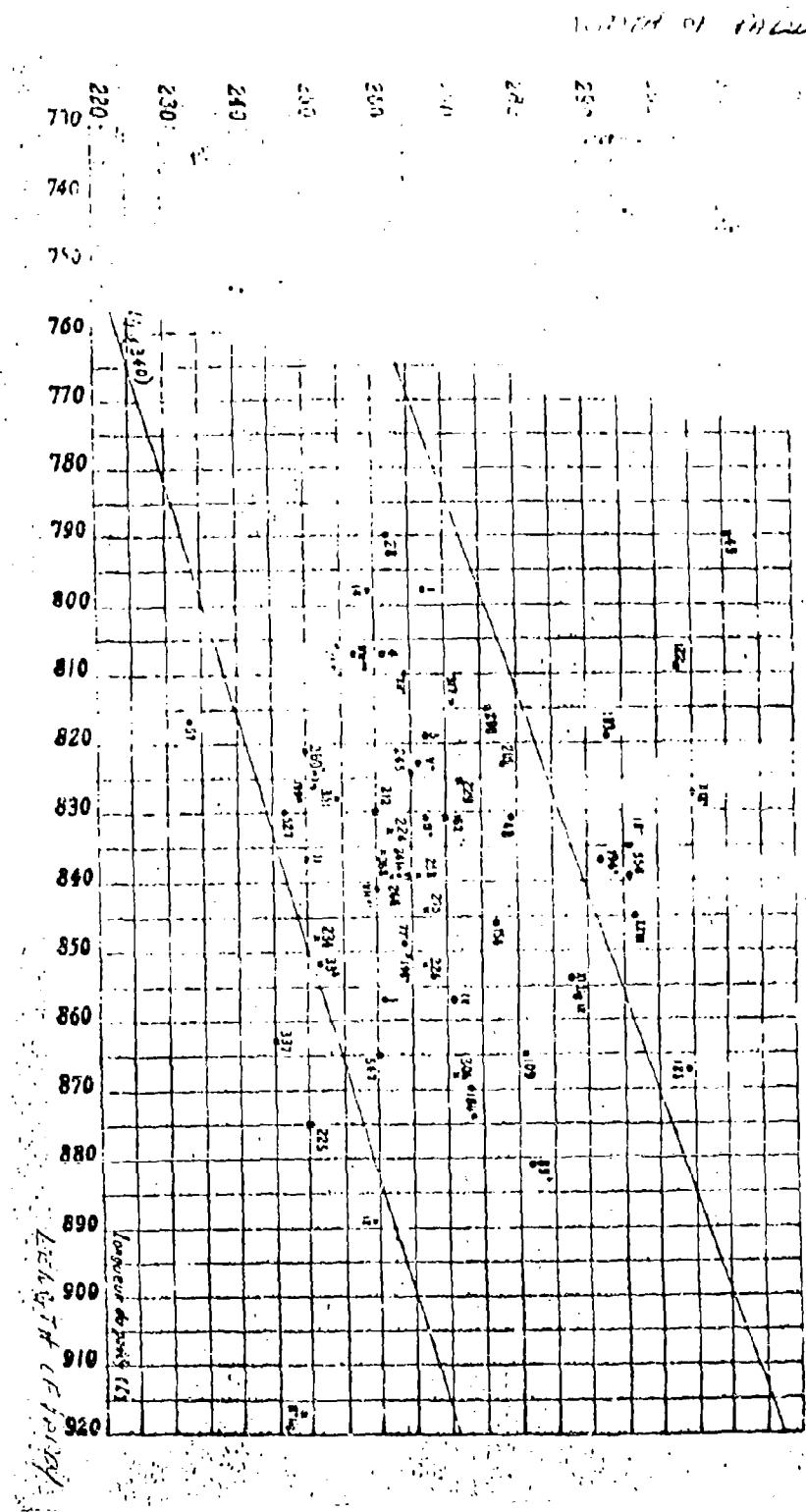
GRAPHIC NOT REPRODUCIBLE

DISTRIBUTION OF PATRONIZED VARIETIES ACCORDING TO THE DIMENSIONS OF THEIR  
PADDY SPATNS

## PADDY GRAINS

## PADDY GRAINS

Scale: 105/1 -- unity: 1/100 of ~~one~~. Variety of X month 125 n.o. of General Order



**GRAPHIC NOT REPRODUCIBLE**

The dimensions of the grains vary greatly. But if the averages are established for normal culture conditions--in the provinces where these varieties are cultivated and patronized--they have a non-negligible relative value.

The pigmentations of the glumellas are determined in comparison with those of certain varieties taken as standards in separating the coloration of the base and the coloration of pigmentations superimposed on this base.

light yellow base: 9-a Gie nuoc, 231-b Muon trang, 26 Bat ngoat,  
246 Som muoi.

dirty yellow base: 582 Lua thong, 503 Hin do, 143 Gi da

yellow base: 218-a Hom, 230-c Hom mua, 88 Hom.

golden yellow base: 540-b Tam coi, 880 Rice from Chau Yen-Son

bright yellow base: 218-b Hom, 627-d Hau leng.

greenish grey base: 874 Paddy nep violet.

ocher base coloration      { 116 Ru thom, 35 Hin soc,  
light yellow ocher:            { 77-b Tam xoan.

-- light brown on base      { 30 Tam to, 138 Tam ruoi,  
yellow ocher:                { 28 Tam nho or Tam lun.

-- brown on yellow ocher      { 234-a Tam den or Giau den,  
base                            { 224 Giau vang.

-- dark brown on base of      { 127-b Tam den.  
yellow ocher:                {

-- black-brown on base of      { 923 Khau bong lai,  
yellow ocher:                { 730 Nep lao van.

-- brown-violet coloration { 625 Nep cau oong ni.  
on base of light yel-  
low:                            {

-- dark brown on base of      { 880 Rice of Chau Yen-Son:  
golden yellow:                {

-- red-brown on base of      { 898 gummy Rice No. 7 Hagieng.  
golden yellow:                {

-- red-brown on base of      { 615-b Mo soi.  
light yellow:                {

|   |   |
|---|---|
| -- lightly burnt bread on<br>a light yellow ocher base: | { 214 Gie,<br>219-b Tam thom,<br>220-b Tam xcan.      |
| -- burnt bread on a yellow<br>ocher base:               | { 219-a Tam thom,<br>247-a Tam xoan,<br>150 Tam xoan. |
| -- dark burnt bread on a<br>yellow ocher base:          | { 210 Tam xoan,<br>209-b Tam thom.                    |
| -- black violet on a pale<br>yellow base:               | { 917 Nep khoai.                                      |
| -- letchi on a light yellow<br>base:                    | { 616-a So leng vu.                                   |
| -- black violet:  | { 626-b Nep khau ca.                                  |

The glumellas are, moreover, less hairy, the sides are more or less projecting. The patronized varieties do not present a special characteristic on these two points. The rachilla can be more or less curved.

The rice grain can be curved: characteristic of certain rices of India. The one of the Tonkinese varieties is straight. The tegmans of caryopsis can be of a pinkish brown color, this depending often on the drying conditions and sometimes on the variety (Tam lun 28, Lua chim 241, etc. . .). Grooves more or less profound can exist on the rice grain (necessitating a more extended machine finishing). The patronized varieties are normal to this last point of view.

The transparency of the grain depends in part on the variety, but it is strongly submitted to the conditions of the surroundings; the grain can be transparent, translucent or opaque. The white body is an opacity that only affects one part of the grain; it can be external or internal, linear or extended, superficial or profound. The grains of a same variety are moreover more or less transparent. In general, types 1/2 round and round have a white body, but they are sometimes stripped of it. Types 1/2 long and long are generally transparent, but certain years or in certain rice fields they can be translucent or with internal white body. The varieties of the V month ordinarily lack transparency, but there are exceptions.

The panicle can be tight or loose (separation of the clusters of the panicle as a result of a swelling in the axilla of the secondary rachis). The rachis can be straight or sinewy. The nodes of the panicle can be hairy or not. The inferior clusters can have spikelets beginning from the base (some foreign rices) or only at the extremity. The grains can be distributed regularly on the clusters or grouped (some rices from the high region). Finally, the panicle can be, in normal conditions, short, average, or long

(varieties: gummy rices, rice of the high regions, Siamese rice with long panicles).

Despite their great number, these characteristics of description are often enough insufficient to identify with sufficient certitude certain varieties and, above all, certain lines which, however, present particular biological aptitudes. Also the study of secondary supplementary characteristics called "small characteristics" was undertaken in the Genetic Laboratory of Saigon just as at Hanoi. The works effected on the other cereals showed that almost all of the cultural characteristics have their correspondance in the sowing. Thus it must be possible to find equally for the rice interesting distinctive small characteristics.

It is necessary to note that varieties very near one another were conserved; they correspond to zones of different elevations. The semi-industrial tests and the controls of returns will precise if the appreciations given by the cultivators are justified and if reductions can not be operated.

The present catalogue is not a "general catalogue of rice varieties of Tonkin". Certain personalities of the agricultural milieu expressed the desire to see the Rice Office establish this general catalogue and give an official name to all of varieties. The establishment of such a document is not a simple thing. The number of varieties is considerable. The prospections effected in depth in the delta and in the middle and high Tonkinese region make new populations appear. On the other hand, selection works effected in the different populations make new types or biological lines constantly appear. If one wanted to content himself with a gross commercial classification of cultivated principle varieties, he would present himself with no difficulty. But if one wants to establish a serious catalogue of cultural varieties it is necessary to be prudent. The more the genetic works follow each other, the more they show that it is necessary to avoid gross assimilations and hasty identifications, particularly in relying upon local denominations.

In other respects, in the research of populations there has appeared quite a great number of little cultivated varieties of cultural and low commercial interest, and on the other hand the purifications permitted to disengage secondary types that revealed themselves without a future. Finally, the comparison of neighboring populations on the test fields brought attention to their unequal value. The multiplication and the diffusion of the patronized varieties contribute to eliminate the populations without interest. There results from it, thus, at an expiration more or less brought nearer, a reduction of the number of varieties.

#### Denominations--Local Classification

One has conserved in the patronized varieties their local denominations. One must not accord more value to these names than they

have. One finds, in effect, just as in Cochinchina, varieties of different aptitudes known under a same vocable. On the other hand, varieties appearing identical from a cultural point of view are known under different names in villages or neighboring regions when it is not in the same village. However, there exists in the ensemble a local classification, which without being precise and exact, reposes nevertheless on certain bases. The groups locally constituted correspond to a size and form or to the color of the husk, or to particular cultural aptitudes or to many of these characteristics at the same time. It seemed interesting to bring together the patronized varieties of great local groups, to give the characteristics of these groups and their limits generally none too precise. These groups correspond to the most cultivated populations. The groups with little importance (notably the groups of round little grains: Cut in the V month, Gi in the X month) have not been described.

Varieties of the V month (very reduced glume)

GROUP OF TEP, CAU, GIE --GRAIN 1/2 LONG WITH CLEAR HUSK

Absolute length varying generally from 7 mm. 9 to 9 mm. 20, exception made for certain populations of Nam-dinh, Ninh-binh: Tep gai, Tep to, with longer grains.

To this group of varieties thus characterized belong numerous populations cultivated in all of the delta, frequently enough in middle land, sometimes low, poor or rich. The populations of this group are appreciated from the commercial point of view and their culture extends at the expense of the populations of the other groups. The principle denominations under which these populations are known are the following: Tep, Gie nam, Cau (Chau in certain regions of Ninh-binh), Giong, Soi, Haiphong, Saigon, Ngau, and sometimes Chanh (Vinh-yen, Phuc-yen, Son-tay, Thai-binh) without it being a fact of difference among these diverse names.

In this group, one finds varieties, with apex and with vegetative organs colored or non colored. The colored forms and non colored forms generally present themselves in a mixture in the populations. Even more they seem to hybridize themselves easily enough between themselves and the reappearance of eliminated forms is frequent enough in the purified types. The patronized varieties belonging to this group are the following: Chiem nam 224, Chiem chanh 225, Soi 226, Tep 212, patronized at Vinh-yen; Chiem chanh 205 and Cau 239 patronized at Phuc-yen; Ngau 12, Chiem chanh 162 patronized at Son-tay, Cau 268 and 269 mixture of lines and Tep 199 patronized at Bac-ninh; Cau 245, Gie 258, Cau 264 patronized at Bac-giang. This last variety being patronized also in the province of Hai-duong with the Giong chiem 351. At Hung-yen the Tep Saigon 229 and Haiphong 306 are patronized; at Thai-binh, the Chiem chanh 290, Tep 275 and Cau chiem 317; be it the total of 20 varieties. Among these varieties, only the 225 and the 12 are with apex and colored vegetative organs, the 12 being with a finer grain. All of the other varieties are quite close to one another and distinguish themselves

by their size and form (Cf. table of botanical characteristics). Certain varieties having nearly identical botanical characteristics were conserved, however, being appreciably different from the cultural point of view.

GROUP OF SAI DUONG-- GRAIN 1/2 LONG WITH COLORED HUSK

Absolute length varying generally from 8 mm.20 to 9 mm.30.

The varieties of this group are of similar commercial quality of the preceding ones, but they occupy in the delta culture surfaces clearly less important and cede place to the light husk varieties. They are suited to semi-low and low rice fields, rich and somewhat rich, but often enough they cultivate themselves also in middle rice fields (Chiem ru to Son-tay, Chiem chanh to Hai-duong, etc. . .). One finds in this troupe varieties resistant to beating down, which is appreciated in the V month. But, on the other hand, one frequently finds fault with an elevated proportion of empty grains. These empty grains having less deep husks are more visible than in the varieties with light husks; the proportion is often no stronger than in this last group. The populations are known under the names: Sai duong, Chiem chanh, sometimes Chiem ru, rarely Chiem dau and Tam.

The populations of this group present in general, as in the preceding group, a mixture in variable proportion of types with colored or uncolored vegetative organs which are separated in the patronized varieties. The patronized varieties classed in this group are Sai duong 109 patronized at Bac-ninh and Bac-giang, Chiem ru 337 patronized at Son-tay, Chiem chanh 198-a patronized at Hai-duong and Chiem chanh 234 patronized at Hung-yen. These four varieties have apexes and colored organs. For 337, coloration overflows from the apex in a washed out tint on top of the glumillas. 109 presents quite long barbs. This variety, like 198a has a slightly dissymetrical glume, a glume more projecting than the two others.

GROUP OF BAU-- GRAIN 1/2 ROUND WITH LIGHT HUSK

Absolute length varying generally from 7 mm.30 to 8 mm.40, except-ion made for a few populations with longer grain.

The varieties of this group known nearly everywhere under the name of Bau, rarely under the name of Soi and of Hom occupy a culture area which is not very important. Their commercial quality is clearly inferior to that of the varieties of the two preceding groups from the fact of the presence of the more or less profound white body. They are generally suited to the rich and fairly rich rice fields of a lesser altitude than those reserved to the Sai-duong, Chiem chanh but one cultivates them quite frequently in middle rice fields. One finds in this group rustic populations adapted

to acid earth (Thai-binh), to salty earth (Kien-an) and to certain poor regions (Vinh-yen).

The populations of this group present equally a mixture of types with colored or uncolored vegetative organs which are separated in the patronized varieties.

The varieties 1/2 round with colored husk are very rare.

The patronized varieties Bau 160 and 157 patronized at Son-tay, 49 patronized at Hai-duong and 122 patronized at Vinh-yen. Only the first of these varieties presents the apex and the uncolored vegetative organs. The completely colored other three clearly differ from each other by their size and form (Cf. tables of botanical characteristics).

Varieties of the X month (very pronounced glume)

TAM GROUP -- GRAIN 1/2 LONG WITH COLORED HUSK

Absolute length varying generally from 7 mm.60 to 8 mm.80.

Some lines issues of Tam can IXa are of a clearly greater length: paddy and rice are of long form and size.

Known under the common name of Tam, the varieties of this group which are seasonal varieties cover vast areas, above all in the North of the delta, notably in the provinces of Vinh-yen, Phuc-yen, Bac-ninh, Phulang-thuong, Son-tay and North Ha-dong. They are suited to middle rice fields and somewhat rich, certain varieties being better adapted to poor soils than others.

According to the regions the populations carry different names: Tam lun, Tam xoan, Tam nho, Tam nho, Tam trang, Tam cao, Tam can, Tam muon, Tam coi, Tam nghen, Tam do, Tam lap, Tam deo, Gie noi, Gie do, etc. . .

The patronized varieties belonging to this group are the following: Tam lun I, Tam xoan 19, Tam lun 28 patronized at Vinh-yen, Tam xoan 4, Tam trang<sup>5</sup>, Tam noi 1, patronized at Phuc-yen, Tam cao VI, Tam lun IV, Gie noi 33b patronized at Son-tay, Tam can IXa, Tam can IXa mixture of lines, Tam xoan 77a, Tam muon 547 patronized at Bac-ninh, Tam muon VIIId1 and VIIId2 patronized at Bac-Giang, all of these provinces being situated in the North of the delta. These diverse varieties distinguish themselves (Cf. tables of botanical characteristics) by their relative dimensions, particularly Tam can IXa mixture of lines and equally by differences which are quite slight, in the coloration of the glumellas, in the conformation of the panicles (VIIId1 and 33b a little more lax), by the coloration of the pellicle of the caryopsis (notably 28 of rose color). In that which concerns the conformation of the glume, the varieties # I, IV, VI, and IXa mixture of lines present quite a projecting glume, the extremity of

the inferior glumella being often more elongated than the other one. The varieties # IXa, 19 and 28 would present this same characteristic even though the glume might be less projecting, whereas for all of the other varieties the two parts are of the same dimensions.

The Ru XIIc variety lightly perfumed, patronized at Hai-duong is also connected with this group. It clearly distinguishes itself from the preceding ones by the apex and the colored vegetative organs, by the very white pellicle of its rice grain which is very corneous and transparent.

To this very important group of Tam, one can add to it three sub-groups:

Tam thom: grains of a pretty yellow or seasonal varieties,

Tam xoan: very deep ocher grains, late varieties,

Tam den: grains with a brown coloration on a yellow base,  
late varieties.

The Tam thom and the Tam xoan are varieties of great commercial value that give the very best rice of Tonkin tested by the following qualities: small grains, fine, very corneous and transparent, perfumed and tender with boiling. They require middle lands, fertile, and very fertile or strongly smoked rice fields. It is for this reason and it is also by their quite great adherence to straw which occasions a more laborious picking that they are only cultivated on restricted areas. Let us notice that in certain regions which give to an ordinary Tam the usurped name of Tam xoan in the goal of selling it at a higher price (Vinh-yen, Phuc-yen, Bac-ninh).

The Rice Office selected Tam thom (Tam thom 84b from Bac-ninh and Tam thom 15 from Phuc-yen) and some Tam xoan (Tam xoan XX from Thai-binh) but does not make the "Small Multiplication" from it because of their weak culture bed. It only furnishes the seeds on demand.

The Tam den, sometimes called Gie den, and sometimes Tam nuoc are of current commercial quality and are suited to relatively low rice fields. They are not widespread at all but occupy in certain regions, notably in Ha-dong, quite important areas. They support an excess of water well and certain varieties can resist without great inconvenience a submersion for a few days. The Rice Office will be able to furnish next year to the public seeds of the selected variety 23<sup>4</sup>b Tam den from Ha-dong.

#### GROUP OF VARIETIES WITH LIGHT CHAFF

##### 1. -- Som Group-- precocious varieties

The great majority of precocious varieties (of the rains season) belong to this group. The varieties with colored chaff

(Ba giang, Man gia, Som pay) are little cultivated. The grains are generally of the type 1/2 long. Length variable from 7 mm.20 to 8 mm. 40. Certain ones (Gie 57) belong to the long type. On the other hand, others have quite thick grains (Som sung, Gie som, Gie canh). This group of varieties comprises very precocious varieties, precocious, and semi-precocious. They give in general a rice of first quality, very fine, very transparent, particularly appreciated on the local market and on the Chinese market. They are suited to very high rice fields, high and semi-high quite poor. Their culture bed has a certain importance only in the provinces of Vinh-yen, Phuc-yen, and Bac-giang. The most commonly used names are: Som gi, Som cau, Som dau, Som lun, Som gai, Danh, Mung, Lau, Mo. The denomination Gie is also utilized. (Gie hoa).

The patronized varieties belonging to this group are the following: Gie hoa 24 and Danh II patronized at Vinh-yen --Som gi 14 and Lua chim 241 patronized at Phuc-yen, Gie 57, Gie hoa 527, Som cau 70a and 70b patronized at Bac-giang. These varieties distinguish themselves by their size and form (Cf. tables of botanical characteristics), the coloration of the pellicle. The panicle of Gie 57 is more lax, even more its glume is clearly projecting and slightly dissymmetrical. The other varieties have the two parts of the glume sensibly equal.

## II. --Group of seasonal and late varieties

In this group one distinguishes late varieties with a fine grain, long or 1/2 long, generally known under the name of Gie nuoc or Gie bun. Certain populations of this group give a very appreciable rice (Gie nuoc from Metri). They are normally suited to low and semi-low lands. One cultivates them on the border of basin-shaped valleys and in the low grounds of the North delta just as the one does the equally late varieties named Hien or Hop, but which have thicker grains, 1/2 long or 1/2 round. Finally, in the low delta one finds seasonal or late varieties with light chaff, but with grains 1/2 long or 1/2 round, often wide with a great internal white body, named Chieu trang, Giong trang, Hin, Muon trang, etc. . . , generally cultivated in middle and low regions.

The patronized varieties belonging to this group are the following: Gie hien 48 and HopVa patronized at Son-tay, Giong trang 186a and Chieu trang XIXc patronized at Thai-binh. These varieties distinguish themselves by their size and form (Cf. table of botanical characteristics). The 48 is more aristated and its glume is more projecting. The 186a quite frequently presents great brown pigmentation on its glumellas of which the base color is light yellow.

## GROUP OF GIAU -- GRAIN 1/2 ROUND WITH COLORED HUSK

Average length variable generally from 7 mm.80 to 8 mm.80. Some populations are 1/2 long.

This group in the low delta covers vast areas. Its rice is of a lesser commercial quality than that of Tam, because of the white

more or less pronounced body. In the regions situated at the limit of the high and low delta (North of Hung-yen and of Hai-duong) the size and form becomes refined and tends towards the type 1/2 long. The most current names are: Giau trang, Giau nghe, Giau ca cuong, Giau lun, Giau hen, Giau bat nao, Giau cao, Giau mo vit. Giau tay co, etc... They are seasonal varieties that are suited to average (middle) rice fields, rich or somewhat rich.

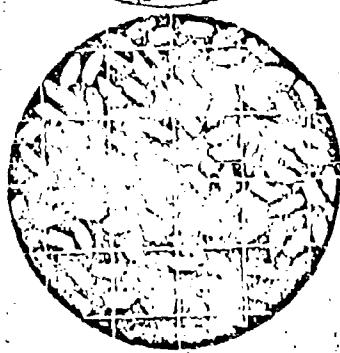
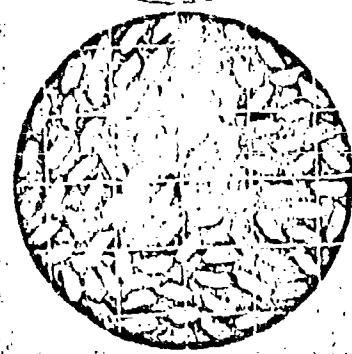
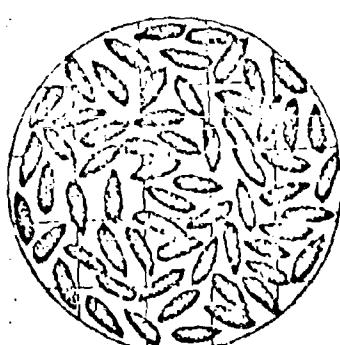
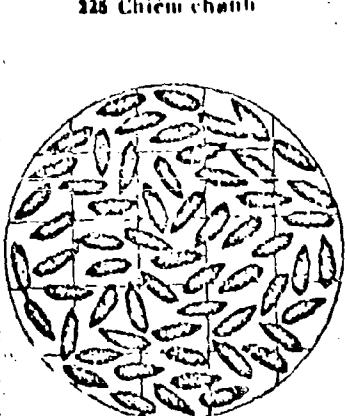
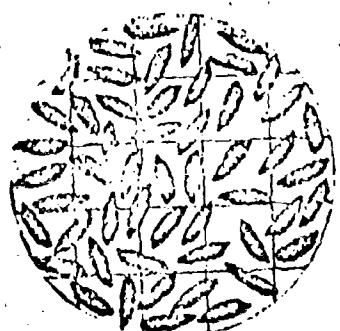
To this group is attached the quite important sub-group of Giau den which is suited to the deep rice fields and which the Rice Office does not patronize because of their red pellicles.

The patronized varieties of the Giau group are the following: Giau nghe 154, Giau nghe 558, Quang nghe 125 patronized at Hai-duong, Giau muon XXIII, Giau lun 194a, Giau bat nao 188a and Giau hen 193 patronized at Thai-binh, Giau cao 89b, Giau trang XI line 12 patronized at Hung-yen. These last two varieties are of the type 1/2 long, the 89b being the longest. The other patronized varieties are distinguished by their dimensions (Cf. table of botanical characteristics). The 154 has a more refined and shorter straw than the others, the 194a has a higher straw. The 89b, XI line 12, XXIII, 558 and 194a have a generally dissymmetrical glume, the extremity of the inferior glumella being a little more elongated than the other one.

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PLATE I  
PLANCHE I



225 Chiêm chánh

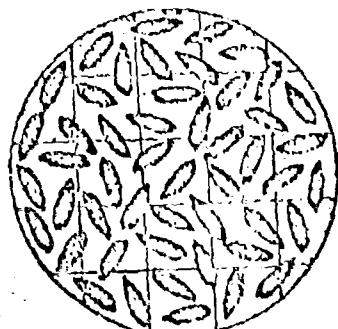
122 Bùu

224 Chiêm nát

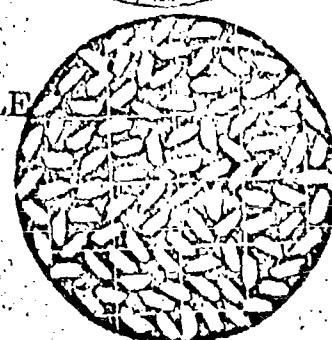
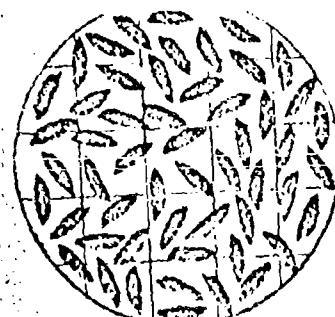
225 Sỏi

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PLANCHE II



202 Chèvre lèp

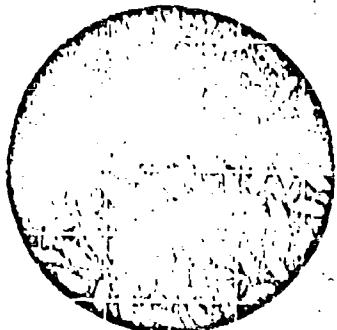


24 Gie hor

**GRAPHIC NOT REPRODUCIBLE**

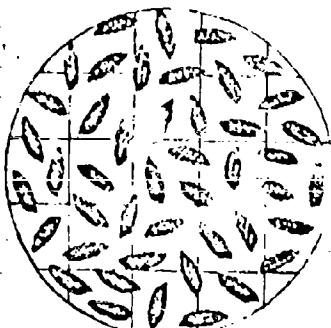
**GRAPHIC NOT REPRODUCIBLE**

PLANCHE III



II Dành

19 Tâm xoan



I Tâm lùn

28 Tâm obô ou tâm lùn  
or

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I

SELECTED AND PATRONIZED VARIETIES  
FROM THE PROVINCE OF VINH-YEN

They are exactly 10 in number.

Varieties of the V month: 5 patronized varieties. Four of them were chosen among 26 purified types originating from 12 local populations gathered up (7 different names). The fifth patronized variety (Tep bau 122) is a native of the province of Thai-binh and underwent with success the tests of comparison and yield.

Varieties of the X month: 5 patronized varieties. They were chosen among 22 purified types originating from 21 local populations gathered together (18 different names).!



## GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF VINH-YEN

PATRONISÉE PAR LA PROVINCE DE VINH-YEN

| Organes                   | CARACTÈRES DE DESCRIPTION |               |               |   |  |   | Observations   |
|---------------------------|---------------------------|---------------|---------------|---|--|---|--|
|                           | Graine de riz             | graine de riz | graine de riz | graine de riz                             | graine de riz  | graine de riz                                 |  |
| graine de riz             | graine de riz             | graine de riz | graine de riz | graine de riz                             | graine de riz  | graine de riz                                 | graine de riz  |
| Vin môle                  |                           |               |               |   |  |   |  |
| Habitué                   |                           |               |               |   |  |   |  |
| Coloration peu prononcée  | Normale                   | 873           | 250           | Jaune clair                               | Pellicule blanche, petit ventre blanc interne              | Normale                                       | Pigmentations légères sur le corps des glumelles.  |
| Id.                       | Id.                       | 809           | 803           | Id.                                       | Pellicule légèrement rosée, avec gros ventre blanc interne | Id.   | Id.  |
| colorée                   | Id.                       | Id.           | 833           | 262                                       | Id.  | Pellicule blanche, petit ventre blanc interne | Id.  |
| Id.                       | Id.                       | 802           | 267           | Id.                                       | Id.  | Id.   | Id.  |
| Id.                       | Id.                       | 830           | 280           | Id.                                       | Id.  | Id.   | Id.  |
| Ximôle                    |                           |               |               |   |  |   |  |
| Coloration très prononcée | Normale                   | 832           | 248           | Jaune jailli                              | Pellicule blanche, petit ventre blanc interne              | Normale                                       | (1) Plusieurs graines portent des barbes assez longues<br>Pigmentations légères sur le corps des glumelles |
| Id.                       | Id.                       | 837           | 269           | Id.                                       | Pellicule légèrement rosée, petit ventre blanc interne     | Id.   | Light pigmentations on the body of the glumellas   |
| Id.                       | Id.                       | 708           | 252           | Coloration brun foncé sur fond jaune ocre | Pellicule blanche, petit ventre blanc interne              | Id.   | Many grains have long hairs  |
| Id.                       | Id.                       | 798           | 287           | Id.                                       | Pellicule légèrement rosée, petit ventre blanc interne     | Id.   | Light pigmentations on the body of glumellas   |
| Id.                       | Id.                       | 760           | 253           | Coloration brun clair sur fond jaune ocre | Pellicule rosée, avec gros ventre blanc interne            | Id.   |  |

CULTURAL CHARACTERISTICS OF THE VARIETIES

| General No. | NAMES<br>of the<br>Varieties | NATURE OF THE<br>RICE FIELDS<br>where the variety<br>is cultivated and<br>area of extension   | Quantity of<br>utilized seeds<br>to transplant<br>1 hectare | Duration<br>of the<br>Nursery |
|-------------|------------------------------|---|---|-------------------------------|
| 225         | Chiem chanh                  | middle and semi-low rice fields,<br>rich and rich enough with 1 or 2<br>harvests--Yen Lac, Vinh-Tuong,<br>Tam-Duong.                            | 65 kg.  | 55 to 75<br>days              |
| 122         | Tep bau                      | semi-low, profound rice fields,<br>somewhat rich and rich with 1 or 2<br>harvests--Yen Lac, Binh-Xuyen --<br>Variety introduced from Thai-Binh. | 65 kg.  | 60 to 75                      |
| 224         | Chiem nam                    | middle r.f. (rice fields) of average<br>richness with 2 harvests--Tam-Duong<br>and Binh-Xuyen.  | 65 kg.  | 60 to 75                      |
| 226         | soi                          | middle r.f. somewhat rich and rich<br>2 harvests--Binh-Xuyen, Tam-Duong   | 65 kg.  | 60 to 75                      |
| 212         | Tep                          | middle r.f.&semi-low of average richness<br>1 or 2 harvests Tam-Duong, Vinh Tuong,<br>Yen-Lac.  | 65 kg.  | 60 to 75                      |
| 24          | Gie hoa                      | high r.f. rich with 1 harvest<br>Binh-Xuyen, Tam Duong  | 45 kg.  | 40 j.                         |
| II          | Danh                         | high r.f., poor and somewhat rich<br>1 or 2 harvests--Tam-Duong.  | 45 kg.  | 40 j.                         |
| 19          | Tam xoan                     | middle r.f. rich and somewhat rich<br>1 or 2 harvests-- Tam-Duong, Vinh-<br>Tuong   | 50 kg.  | 45 j.                         |
| I           | Tam lun                      | middle r.f. quite poor and quite<br>rich enough with 1 or 2 harvests<br>Tam-Duong, Vinh-Tuong.  | 50 kg.  | 45 j.                         |
| 28          | Tam nho or<br>Tam lun        | middle and semi-low r.f. rich<br>enough and rich; 1 or 2 harvests<br>Vinh-Tuong, Yen-Lac, and Tam-Duong.  | 50 kg.  | 45 j.                         |

## GRAPHIC NOT REPRODUCIBLE

. . . SELECTED FROM THE PROVINCE OF VINH-YEN

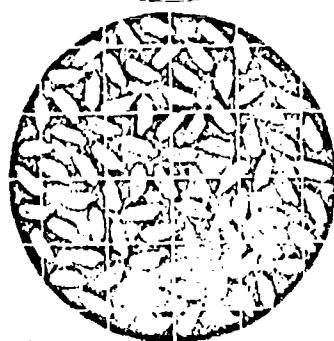
| Écartement des tuteurs au replantage | Nombre de brins par tige de riz | Hauteur de la tige | Epoque de l'ensemencement  | Epoque de l'ensemencement  | Epoque de floraison            | Epoque de récolte                                    | Yield (1)        |
|--------------------------------------|---------------------------------|--------------------|----------------------------|--|--------------------------------|--|------------------|
| 0,22                                 | 3 à 7                           | 15 à 16            | 1re quinzaine de Novembre  | 19 Juin  | Avril                          | 2e quinzaine de Mai                                  | FIFTEENTH        |
| 0,23                                 | 5 à 7                           | 13 à 23            | 1re quinzaine de Novembre  | 19 Juin  | Id.                            | 18 à 24  | Qx               |
| 0,23                                 | 5 à 7                           | 13 à 23            | 1re quinzaine de Novembre  | 19 Juin  | Id.                            | 18 à 24  | Qx               |
| 0,22                                 | 5 à 7                           | 14 à 16            | Id.                        | 1er Janvier et dans le courant de Janvier pour les rizières à 2 récoltes | 1er Janvier                    | Id.  | 11 à 14          |
| 0,23                                 | 5 à 7                           | 14 à 16            | Id.                        | 1er Janvier et dans le courant de Janvier pour les rizières à 2 récoltes | 1er Janvier                    | Id.  | 11 à 14          |
| 0,20                                 | 5 à 7                           | 14 à 16            | Id.                        | 1er Janvier et dans le courant de Janvier pour les rizières à 2 récoltes | 1er Janvier                    | 2e quinzaine Mai et début Juin                       | 14 à 21          |
| 0,25                                 | 3 à 7                           | 13 à 23            | Id.                        | 1er Janvier et dans le courant de Janvier pour les rizières à 2 récoltes | 1er Janvier                    | Id.  | 14 à 24          |
| 0,20                                 | 3 à 7                           | 13 à 23            | Id.                        | 1er Janvier et dans le courant de Janvier pour les rizières à 2 récoltes | 1er Janvier                    | Id.  | 14 à 24          |
| 0,25                                 | 3 à 7                           | 13 à 23            | Id.                        | 1er Janvier et dans le courant de Janvier pour les rizières à 2 récoltes | 1er Janvier                    | Id.  | 14 à 24          |
| <b>X<sup>e</sup> mois</b>            |                                 |                    |                            |  |                                |  |                  |
| 0,20                                 | 4 à 5                           | 13 à 16            | 1er Juin                   | 1er Juillet  | 1er Août                       | 1er - Mi-Septembre                                   | MID - Mi-Octobre |
| 0,20                                 | 4 à 5                           | 13 à 16            | Début Juin                 | 1 <sup>re</sup> décade Juillet   | 1 <sup>re</sup> décade Juillet | 1 <sup>re</sup> - 2 <sup>e</sup> quinzaine Septembre | 9 à 12           |
| 0,20                                 | 4 à 5                           | 13 à 16            | Id.                        | Id.  | Id.                            | Id.  | 12 Qx            |
| 0,20                                 | 4 à 5                           | 14 à 16            | 2 <sup>e</sup> décade Juin | Fin Juillet  | Fin Juillet                    | Mi-Octobre   | 13 à 20          |
| 0,25                                 | 4 à 5                           | 14 à 16            | 2 <sup>e</sup> décade Juin | Fin Juillet  | Fin Juillet                    | 2 <sup>e</sup> décade Novembre                       | Qx               |
| 0,20                                 | 4 à 5                           | 13 à 16            | Id.                        | Id.  | Id.                            | Id.  | 10 à 16          |
| 0,20                                 | 4 à 5                           | 13 à 16            | Id.                        | Id.  | Id.                            | Id.  | 15 à 20          |
| 0,25                                 | 4 à 5                           | 13 à 16            | Id.                        | Id.  | Id.                            | Id.  | Qx               |

The indicated yields can be obtained in normal conditions. In practice, they can be inferior or superior in more unfavorable situations or in richer lands.

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PLATE IV GRAPHIC NOT REPRODUCIBLE

PLANCHE IV



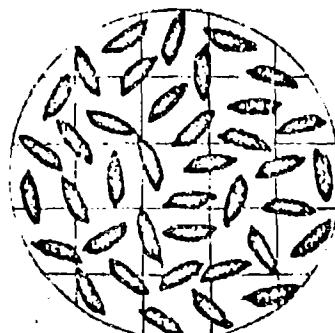
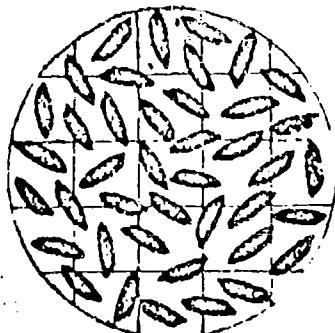
205 Chem chamb

369 Chu



14 Sén di

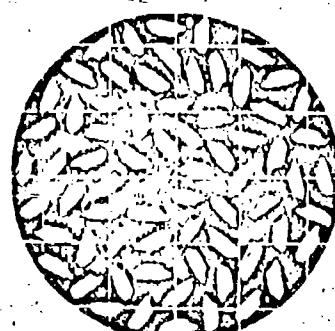
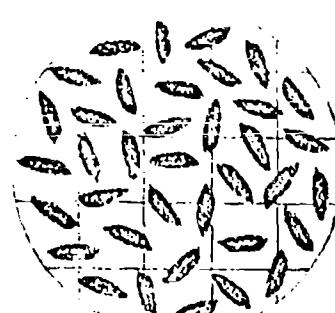
— 26 —  
GRAPHIC NOT REPRODUCIBLE  
PLANCHE V



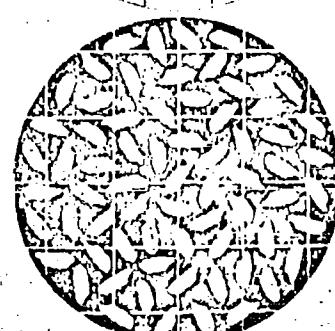
241 Láu chum



4 Tôm nõn



5 Tôm trắng



6 Tôm nõi

II

SELECTED AND PATRONIZED VARIETIES  
FROM THE PROVINCE OF PHUC-YEN

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They are exactly 7 in number.

Variety of the V month: 2 patronized varieties. One of them was chosen among 10 purified types originating from 4 local populations gathered together (three different names). The other, Chiem cau 269 is a native of Bac-ninh and underwent successfully the tests of comparison and yield.

Variety of the X month: 5 patronized varieties. Four of them were chosen among 28 purified types originating from 21 local populations gathered together (17 different names). The fifth patronized variety is foreign to the province: it showed itself superior to the local varieties in the comparative tests.

- 2 / -

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BOTANICAL CHARACTERISTICS OF THE VARIETIES

| General<br>No. | General<br>NAME<br>of the<br>varieties | Village of<br>origin of<br>the<br>selected<br>variety is<br>the issue | CHARACTERISTICS OF CLASSIFICATION   |  |                             |                                 |   |     |
|----------------|--|---|---|--|-----------------------------|---------------------------------|---|-----|
|                |  |   | NAME<br>of the<br>starchy<br>varieties<br>of the<br>population<br>of which the<br>selected<br>variety is<br>the issue | colored<br>or<br>aristate<br>gummy<br>barbat | red<br>or<br>white<br>color | colored<br>or<br>non-<br>barbat | Round,<br>1/2 round<br>1/2 long<br>long |     |
| 205            | Chiêm thanh                            | Tiền-Tần  | Simplicifolia<br>Amidon-<br>neuse   | Aristée<br>Barbata                           | WHITE                       | LIGHTLY<br>colored              | Variétés du<br>ment<br>colorees         |     |
| 269            | Chiêm cátu                             | Tam-Son<br>B. N.  | id.   | id.  | id.                         | id.                             | id.                                     | id. |
| 14             | Stem gi                                | Cửu Long-Nô   | Amidon-<br>neuse  | Aristée<br>Barbata                           | Blanche                     | Légère-<br>ment<br>coloree      | Variétés du<br>ment<br>colorees         |     |
| 241            | Lúa chín                               | Yên-Dịnh<br>T. H.   | id.   | id.  | id.                         | id.                             | id.                                     | id. |
| 4              | Tâm xoan                               | Vân-Trì   | id.   | id.<br>(1)                                   | id.                         | Colorees                        | id.                                     | id. |
| 5              | Tâm trắng                              | Cửu Long-Nô   | id.   | id.  | id.                         | id.                             | id.                                     | id. |
| 1              | Tâm nồi                                | Đo-Nhàn   | id.   | id.  | id.                         | id.                             | id.                                     | id. |

## GRAPHIC NOT REPRODUCIBLE

### CHARACTERISTICS OF DESCRIPTION

| mes-<br>sta-<br>tuo-<br>on<br>in | GRAIN DE PADDY                                       |          |            |               |  | Grain<br>de riz<br>de riz  | Pan-<br>cules | Observations  |
|----------------------------------|--|----------|------------|---------------|--|--|---------------|---|
|                                  | bec  | glumes   | ép.<br>100 | larger<br>ép. | coloration<br>des glumelles                              |  |               |   |
| <i>mois</i>                      |  |          |            |               |  |  |               |   |
| Avril                            | Peu pro-<br>noncé<br><i>BLAY</i><br><i>REVEREND</i>  | Normales | 823        | 278           | Jaune clair<br>UNI ET<br>INTER                           | WHITE PELL-<br>ICLE, SMALL<br>WHITE EXTER-<br>NAL PELL-<br>ICLE, PELL-<br>ICLE | Normales      | Pigmentations<br>légères sur le<br>corps des<br>glumelles<br>Jaune clair<br>UNI ET<br>INTER                     |
| May                              | Id.  | Id.      | 800        | 254           | Id.  | Id.  | Id.           | Id.   |
| <i>mois</i>                      |  |          |            |               |  |  |               |   |
| May                              | Très pro-<br>noncé<br><i>BLAY</i><br><i>REVEREND</i> | Normales | 753        | 240           | Jaune clair<br>UNI ET<br>INTER                           | WHITE PELL-<br>ICLE, TRACE<br>OF WHITE<br>INTERVAL<br>PELL-<br>ICLE            | Normales      | Pigmentations<br>légères sur le<br>corps des<br>glumelles<br>Jaune clair<br>UNI ET<br>INTER                     |
| May                              | Id.  | Id.      | 838        | 203           | Id.  | WHITE PELL-<br>ICLE, SMALL<br>WHITE INTER-<br>VAL PELL-<br>ICLE                | Id.           | Id.   |
| May                              | Id.  | Id.      | 807        | 261           | WHITE<br>CORN<br>CORN<br>WHITE<br>WHITE<br>PELL-<br>ICLE | WHITE<br>PELL-<br>ICLE,<br>SMALL<br>WHITE<br>INTERVAL<br>PELL-<br>ICLE         | Id.           | Id.<br>(1) Quelques<br>grains portent<br>des barbes<br>assez longues<br>Etat: GRANDS<br>ETAT: PETITS<br>GRANDES |
| May                              | Id.  | Id.      | 810        | 237           | WHITE CORN<br>IN QUILL<br>CORN PELL-<br>ICLE             | Id.  | Id.           | Id.   |
| May                              | Id.  | Id.      | 857        | 261           | Id.  | Id.  | Id.           | Id.   |

## GRAPHIC NOT REPRODUCIBLE

### CULTURAL CHARACTERISTICS OF THE VARIETIES

| Numéro<br>général<br>du rép.<br>N° | NOMS<br>des variétés | NATURE DES RIZIÈRES<br>où la variété est cultivée<br>et aire d'extension  | Quantité<br>d'esemences<br>utilisées<br>pour<br>replier<br>1 hectare | Durée<br>de la<br>pépi-<br>olière | Variétés du             |                    |
|------------------------------------|----------------------|---|--|-----------------------------------|-------------------------|--------------------|
|                                    |                      |   |  |                                   | Nom<br>de la<br>variété | Nombre<br>de jours |
| 205                                | Chiêm chanh          | MILLET + SEMI - LOU R.F., RICH +<br>NEUTR. RICE, LOC 2 HARVESTS -<br>YEN - KHMER, DONG - ANH  | 60 kg.   | 60 Jours                          |                         |                    |
| 209                                | Chiêm cátu           | MILLET + SEMI - KHOI R.F., RICH +<br>NEUTR. RICE, LOC 2 HARVESTS -<br>YEN - KHMER, DONG - ANH -<br>LOC 3 ESTIMATED AS LOC 2 HARVESTS<br>LOC 2 ESTIMATED AS LOC 3 HARVESTS -<br>LOC 3 HARVESTS - YEN - KHMER | 60 kg.   | 60 Jours                          |                         |                    |
| 14                                 | Sâm gi               | RICE R.F., LOC 1 KHMER -<br>KHOI - ANH - YEN - KHMER - YEN  | 45 kg.   | 36 à 40<br>Jours                  |                         |                    |
| 241                                | Lúa chín             | MILLET + SEMI - KHMER R.F., RICH +<br>SEMIGRASS WITH 1 HARVEST -<br>KHOI - KHMER - KHMER 1Y LATEROUS -<br>LOC 2 HARVEST - HON ESTIMATED HARVESTS -<br>VEGETABLE TO REPLACE LOC 2<br>YEN - KHMER             | 45 kg.   | 36 à 40                           |                         |                    |
| 4                                  | Tâm xoan             | MILLET R.F. SEMI - KHMER R.F., RICH +<br>LOC 2 HARVESTS - KHOI - ANH - VARIETY<br>DONG - ANH - YEN CULTIVATED<br>EXTENSIVELY IN PHUOC - YEN<br>SUP.   | 45 kg.   | 45 à 55                           |                         |                    |
| 5                                  | Tâm trắng            | MILLET R.F. SEMI - KHMER R.F.<br>LOC 2 HARVESTS - KHOI - ANH,<br>DONG - ANH - YEN CULTIVATED<br>EXTENSIVELY IN PHUOC - YEN NORD   | 45 kg.   | 45 à 60                           |                         |                    |
| 1                                  | Tâm nồi              | MILLET R.F. SEMI - KHMER R.F.<br>LOC 1 HARVEST - YEN - KHMER, KHMER<br>KHOI - KHMER - YEN CULTIVATED<br>VARIETY IN PHUOC - YEN SUD  | 45 kg.   | 45 à 60                           |                         |                    |

GRAPHIC NOT REPRODUCIBLE

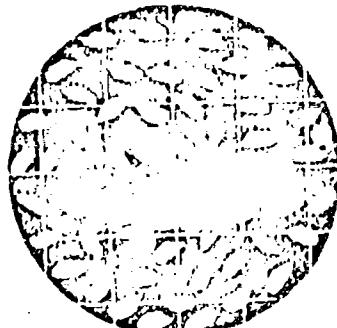
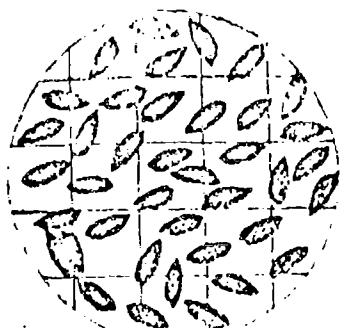
. . . SELECTED FROM THE PROVINCE OF PHUC-YEN

| Mois  | Nombre moyen de brins par tige | Nombre moyen de graines par graine | Epoque de semis et semence | Epoque de replantage et resemence                      | Epoque de floraison                                   | Epoque de récolte et floraison           | Rendements à l'hectare (Q)                   |
|-------|--------------------------------|------------------------------------|----------------------------|--|---|--|--|
| 22-23 | 6 à 8                          | 17                                 | 1 à 12                     | 2 <sup>e</sup> et 3 <sup>e</sup> décades Octobre       | Fin Décembre début Janvier                            | Fin Avril début Mai                      | Fin Mai Juin                                 |
| 22-23 | 6 à 8                          | 19                                 | 1,23                       | Mi-Octobre début Novembre                              | Début Janvier   | Début Mai                                | 11 à 16 Qx                                   |
| mois  |                                |                                    |                            |  |   |  |  |
| 20-21 | 3 brins                        | 10                                 | 0,90                       | Fin Mai  | Mi-Juillet  | Fin Août 1 <sup>e</sup> decade Septembre | Fin Septembre, 1 <sup>e</sup> decade Octobre |
| 20    | 4 —                            | 10                                 | 0,98                       | Début Juin   | 2 <sup>e</sup> et 3 <sup>e</sup> décades Juillet Juin | 2 <sup>e</sup> quinzaine Septembre       | 16 à 18 Qx                                   |
| 23-25 | 6 —                            | 14                                 | 1,00                       | 1 <sup>er</sup> et 2 <sup>e</sup> décades Juin Juillet | 3 <sup>e</sup> décade Juillet — Mi-Août               | 2 <sup>e</sup> quinzaine Octobre         | 15 à 20 Qx                                   |
| 22-25 | 6 —                            | 14                                 | 1,00                       | Id.  | Id.   | Id.                                      | 12 à 20 Qx                                   |
| 22-23 | 6 —                            | 14                                 | 0,95                       | Id.  | Id.   | Id.                                      | 16 à 20 Qx                                   |

Indicated yields can be obtained under normal conditions. In practice they can be inferior or superior in more unfavorable situations or in newer kinds.

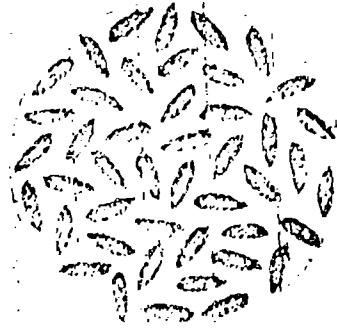
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PLANCHE VI



157 Chiêm bắn

160 Chiêm bắn



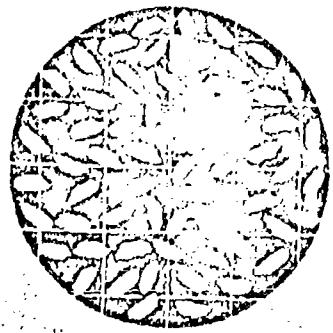
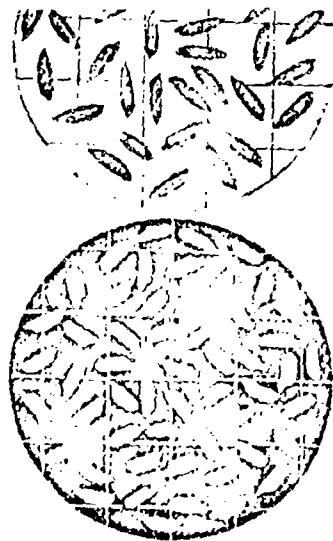
163 Chiêm ngắm



164 Chiêm chánh

- 32 -

GRAPHIC NOT REPRODUCIBLE



48 Giờ biến

### III

#### SELECTED AND PATRONIZED VARIETIES FROM THE PROVINCE OF SON-TAY

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They are exactly 10 in number.

Varieties of the V month: 5 patronized varieties. They were chosen among 32 purified types originating from 13 local populations (7 different names).

Varieties of the X month: 5 patronized varieties. They were chosen among 28 purified types originating from 25 local populations (21 different names). One of these patronized varieties is a native of the province of Ha-dong. It showed itself to be superior to the local varieties in the comparative tests.

## GRAPHIC NOT REPRODUCIBLE

### BOTANICAL CHARACTERISTICS OF THE VARIETIES

| Numéro<br>Général<br>et<br>n°<br>de la<br>variété | Noms<br>et noms<br>de la variété | Village<br>d'origine de<br>la population<br>dont est issue<br>la variété<br>selectionnée | CARACTÈRES DE CLASSIFICATION   |         |                             |                             |                |                     | Variétés du<br>second |
|---|----------------------------------|--|--------------------------------|---------|-----------------------------|-----------------------------|----------------|---------------------|-----------------------|
|   |                                  |  | Amidon-<br>neuse ou<br>gluante | Malique | Pelticule                   | Glumel-<br>les colorées     | Apex<br>coloré | Scutellum<br>coloré |                       |
| 157   | Chiêm bùn<br>Phong-Turing        | Amidon-<br>neuse   | Aristee                        | Blanche | Légère-<br>ment<br>colorées | Coloré                      | Incolore       | Coloré              | Variétés du<br>second |
| 160   | Chiêm bùu                        | id.  | id.                            | id.     | id.                         | id.                         | Incolore       | id.                 |                       |
| 172   | Chiêm ngâu                       | Sen-Chieu  | id.                            | id.     | id.                         | id.                         | Coloré         | longu               |                       |
| 162   | Chiêm chanh                      | La Xuyen   | id.                            | id.     | id.                         | id.                         | Incolore       | long                |                       |
| 337   | Chiêm trè                        | id.  | id.                            | id.     | Colorées                    | Coloré                      | Coloré         | long                |                       |
| 48  | Gié hiên                         | Dan-Phuong<br>(Hà-Dông)  | id.                            | id.     | id.                         | Légère-<br>ment<br>colorées | Incolore       | long                | Variétés du           |
| V-n   | Bop.                             | Sen-Chieu  | id.                            | id.     | id.                         | id.                         | id.            | id.                 |                       |
| 33-b  | Gié nồi                          | Hoàng-Xô   | id.                            | id.     | id.                         | Colorées                    | id.            | id.                 |                       |
| VI  | Tâm cao                          | Sen-Chieu  | id.                            | id.     | id.                         | id.                         | id.            | id.                 |                       |
| IV  | Tâm lòn                          | Yen-Vé   | id.                            | id.     | id.                         | id.                         | id.            | id.                 |                       |

GRAPHIC NOT REPRODUCIBLE

FROM THE PROVINCE OF SON-TAY

| Organes végétatifs colorés ou non | dec            | glaumes  | CARACTÈRES DE DESCRIPTION |   |  |                | Observations  |
|-----------------------------------|----------------|----------|---------------------------|---|--|----------------|---|
|                                   |                |          | GRAIN DU PADDY            | coloration des glumelles                                      | Grain de riz   | Particularités |   |
| Ve mois<br>narrow                 | Peu prononcé   | Normales | 787 297                   | LIGHT GREEN<br>Jaune clair                                    | WHITE PELLICLE<br>WHITE DÉG.<br>WHITE EXTERNAL<br>BODY           | normales       | LIGHT IN<br>THE BODY ET<br>GLUMELLES<br>Pigmentations<br>légères sur<br>le corps des<br>glumelles |
| Incolorées<br>Colorées            | Id.            | Id.      | 748 407                   | id.   | WHITE PELLICLE<br>SOME SMALL<br>WHITE SPOTS                      | id.            | id.   |
| Incolorées<br>Colorées            | Id.            | Id.      | 889 250                   | id.   | WHITE PELLICLE<br>WHITE DÉG.<br>WHITE EXTERNAL<br>BODY           | id.            | id.   |
| Incolorées<br>Colorées            | Id.            | Id.      | 830 270                   | id.   | WHITE PELLICLE<br>WHITE DÉG.<br>WHITE EXTERNAL<br>BODY           | id.            | id.   |
| X <sup>e</sup> mois<br>very       | Très prononcée | Id.      | 831 270                   | Jaune clair<br>LIGHT GREEN                                    | WHITE,<br>WHITE PELLICLE<br>WHITE DÉG.<br>WHITE EXTERNAL<br>BODY | id.            | Pigmentations<br>grossières sur le<br>corps des<br>glumelles                                      |
| Id.                               | Id.            | Id.      | 823 266                   | id.   | WHITE,<br>WHITE PELLICLE<br>WHITE DÉG.<br>WHITE EXTERNAL<br>BODY | id.            | id.   |
| Id.                               | Id.            | Id.      | 852 253                   | Coloration<br>peut évoquer<br>la végétation<br>TOURN<br>LAISE | WHITE PELLICLE<br>WHITE DÉG.<br>WHITE EXTERNAL<br>BODY           | id.            | id.   |
| Id.                               | Id.            | Id.      | 839 203                   | Coloration<br>peut évoquer<br>la végétation<br>TOURN<br>LAISE | id.  | id.            | id.   |
| Id.                               | Id.            | Id.      | 857 271                   | Coloration<br>peut évoquer<br>la végétation<br>TOURN<br>LAISE | id.  | id.            | id.   |

CULTURAL CHARACTERISTICS OF THE VARIETIES

|  | Gen No. | NAMES of the Varieties | NATURE OF THE RICE FIELDS where the variety is cultivated and area of extension  | Quantity of Seeds utilized to plant 1 hectare | Duration of the Nursery |
|--|---------|------------------------|--|---|-------------------------|
|  | 157     | Chiem bau              | low and average low r.f. (rice fields) fertile, argillosilicious--Phuc-Tho, Thach-That, Quoc-Cai, Quang-Oai and Tung-Thien--Very widespread variety currently cultivating itself in rich enough r.f. | 70 kg.  | 55-65 days              |
|  | 160     | Chiem bau              | -id-   | 70 kg.  | id.                     |
|  | 12      | Chiem ngau             | middle r.f., sillico-argilicious or argilosilicious, of average fertility--Phuc-Tho, Tung-Thien, Thach-That--Quite widespread variety currently cultivating itself in middle r.f.                    | 70 kg.  | id.                     |
|  | 162     | Chiem chanh            | -id-   | 70 kg.  | id.                     |
|  | 337     | Chiem ru               | Middle r.f. and middle low, argilosilicious, quite fertile, in Thach-That and Quoc-Oai--Little cultivated variety, cultivates in quite rich r.f. not too productive but of good quality.             | 70 kg.  | id.                     |
|  | 48      | Gie hien               | Middle and semi-low r.f., argilosilicious, quite rich, in Phuc-Tho, Thach-that, Quang-Oai, Dan-Phuong and Hoan-Long, Quite widespread variety in Ha-dong North.                                      | 50 kg.  | 45-7 days               |
|  | V-a     | Hop                    | Middle and semi-low r.f., argilosilicious, quite rich, in Phuc-Tho, Thach-That, Quang-Oai, Quoc-Oai and Tung-Thien--widespread variety.  | 50 kg.  | id.                     |
|  | 33-b    | Gie-noi                | Middle r.f., sillico-argilicious or argilosilicious, of average fertility in Phuc-Tho, Thach-That, Quoc-Oai and Tung-Thien (Son-Tay), Dan-Pnudng and Hoai-Duc (Ha-dong North)--Widespread variety.   | 50 kg.  | id.                     |
|  | VI      | Tam cao                | Middle r.f., argilosilicious or sillicoargilicious, of average fertility in Phuc-Tho, Tung-Thien, Quang-Oai and Thach-That--Variety quite widespread   | 50 kg.  | id.                     |
|  | IV      | Tam lun                | -id-   | 50 kg.  | id.                     |

## GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF SON-TAY

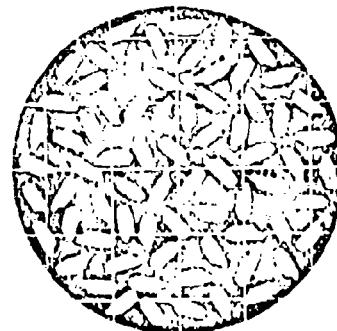
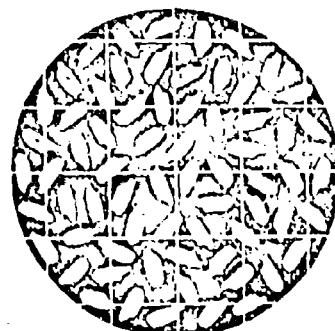
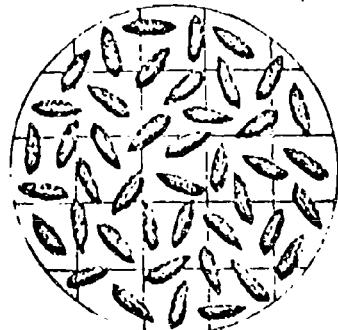
VILLAGE OF QUAT

| Carte-<br>ment des<br>couches<br>à repli-<br>quage | Nombre<br>de brins<br>par<br>touille<br>au repli-<br>quage | Surface<br>en ha.<br>Hauteur moyenne<br>en m. | Epoque<br>de semis<br>de S. (1)   | Epoque<br>de repliage<br>de R. (2)   | Epoque<br>de floraison<br>F. (3)         | Epoque<br>de récolte<br>R. (4)                                | Rendement<br>en hectare<br>(1) |
|--|--|---|---|--|--|---|--------------------------------|
| <i>V<sup>e</sup> mois</i>                          |  |   |   |  |  |   |                                |
| 0 à 21-<br>0, 22-<br>0, 23                         |  |   |   |  |  |   |                                |
| URINS  | 5 à 6<br>brins   | 11 1,00                                       | 2 <sup>e</sup> quinz.<br>Octobre et<br>1 <sup>re</sup> decade<br>Novembre | de 2 <sup>e</sup> quinzaine<br>Décembre à 1 <sup>re</sup><br>décade<br>Janvier | 2 <sup>e</sup> quinzaine<br>Avril<br>Mai | 3 <sup>e</sup> decade<br>Mai à 1 <sup>re</sup><br>décade Juin | 20 à 23<br>Qx                  |
| PUTINS   | 5 à 6<br>brins   | 11 1,00                                       | Id.   | Id.  | Id.                                      | Id.   | Id.                            |
| Id.  | Id.  | 11 1,10                                       | Id.   | Id.  | Id.                                      | Id.   | 20 à 23<br>Qx                  |
| Id.  | Id.  | 11 1,00                                       | Id.   | de 2 <sup>e</sup> quinzaine<br>Décembre à<br>2 <sup>e</sup> decade<br>Janvier  | Id.                                      | Id.   | 18 à 21<br>Qx                  |
| Id.  | Id.  | 10 0,95                                       | Id.   | Id.  | Id.                                      | Id.   | 18 à 21<br>Qx                  |
| Id.  | Id.  | 10 0,83                                       | Id.   | Id.  | Id.                                      | Id.   | 17 à 20<br>Qx                  |
| <i>X<sup>e</sup> mois</i>                          |  |   |   |  |  |   |                                |
| 0 à 22-<br>0, 24                                   |  |   |   |  |  |   |                                |
| URINS  | 5 à 6<br>brins   | 14 1,20                                       | 2 <sup>e</sup> quinz.<br>Juin   | 3 <sup>e</sup> decade<br>Juillet à<br>1 <sup>re</sup> decade<br>Août           | 2 <sup>e</sup> quinzaine<br>Octobre      | 2 <sup>e</sup> quinzaine<br>Novembre                          | 20 à 24<br>Qx                  |
| PUTINS   | 5 à 6<br>brins   | 14 1,20                                       | Id.   | Id.  | Id.                                      | Id.   | Id.                            |
| Id.  | Id.  | 12 1,20                                       | Id.   | Id.  | Id.                                      | Id.   | 21 à 24<br>Qx                  |
| Id.  | Id.  | 17 1,10                                       | 1 <sup>re</sup> quinz.<br>Juin  | 2 <sup>e</sup> décade<br>Juillet à<br>1 <sup>re</sup> décade<br>Août           | 1 <sup>re</sup> décade<br>Octobre        | 1 <sup>re</sup> quinzaine<br>Novembre                         | 20 à 23<br>Qx                  |
| Id.  | Id.  | 16 1,10                                       | Id.   | Id.  | Id.                                      | Id.   | 20 à 23<br>Qx                  |
| Id.  | Id.  | 16 1,05                                       | Id.   | Id.  | Id.                                      | Id.   | 20 à 23<br>Qx                  |

The indicated yields can be obtained under normal conditions. In practice, they can be inferior or superior in more unfavorable situations or in richer lands.

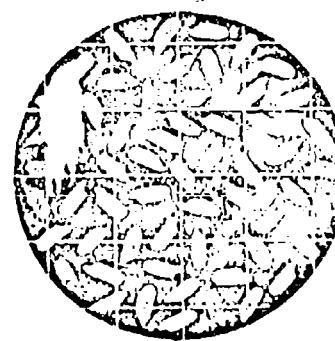
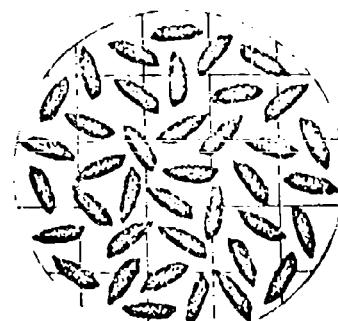
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PLANCHE IX



268 Gäu

269 a. Gäu mélange de lignes  
GÄU MIT LINIEN

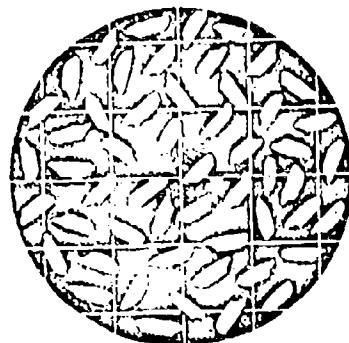
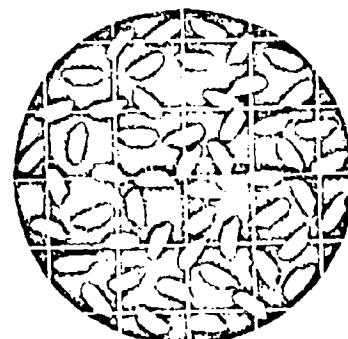
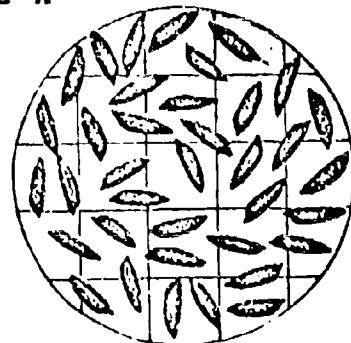
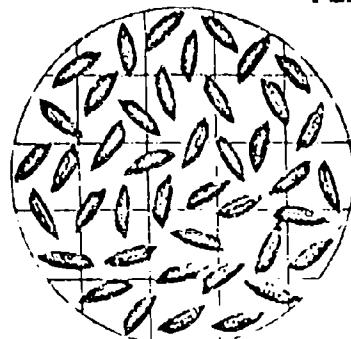


270 Tep

271 Sali-duong

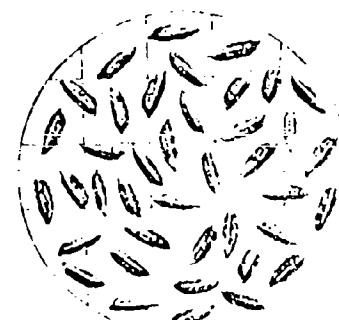
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PLANCHE X



IX a Tum can

IX a Tum can mélange de lignées  
Doux et sucre



77 a Tum xomu



547 Tum muqu

IV

SELECTED AND PATRONIZED VARIETIES FROM THE  
PROVINCE OF BAC-NINH

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They are exactly 8 in number.

Varieties of the V month: 4 patronized varieties. Three of them were chosen among 20 purified types originating from 15 local populations (8 different names). One of these patronized varieties (269a Cau) is constituted by a mixture of interesting lines (choice among 46 lines). The fourth patronized variety is a native of the province of Thai-binh; it showed itself superior to the other local varieties in the comparative tests.

Varieties of the X month: 4 patronized varieties. They were chosen among 57 purified types originating from 44 local populations (25 different names). One of the patronized varieties is constituted by a mixture of interesting lines (choice among 24 lines).

- 41 -

**GRAPHIC NOT REPRODUCIBLE**

**BOTANICAL CHARACTERISTICS OF THE VARIETIES**

| Numéro<br>Général | Noms<br>français<br>et vietnamiens<br>des variétés | Village<br>d'origine de<br>la population<br>dont est issue<br>la variété<br>sélectionnée | CARACTÈRES DE CLASSIFICATION   |            |                                  |  |                          |  |  |
|-------------------|--|--|--------------------------------|------------|----------------------------------|--|--------------------------|--|--|
|                   |  |  | Amidon-<br>neuse ou<br>gluante | Mutique    | Pellicule<br>rouge ou<br>blanche | Glumel-<br>les colo-<br>rées<br>ou non | Apex<br>coloré<br>ou non | Ronde<br>1/2 ronde<br>1/3 lun-<br>gue longue |  |
| 268               | Cau  | Huong-Van  | Amidon-<br>neuse               | Aristée    | Blanche                          | Légère-<br>ment colorées               | Id.                      | Id.  | Variétés du<br>id. et id.<br>Incolore 1/2 longue |
| 269-a             | Cau mélange de<br>lignées moyennes                 | Tam-Son  | Id.                            | Id.        | Id.                              | Id.                                    | Id.                      | Id.  |  |
| 109               | Tép  | Lang-Tai   | Id.                            | Id.        | Id.                              | Id.                                    | Id.                      | Id.  |  |
| 109               | Sát đường  | Doan-Tee<br>T. B.  | Id.                            | Id.<br>(O) | Id.                              | Colorées                               | Coloré                   | Id.  |  |
| IX-a              | Tam cạn (type)                                     | Yen-Lang   | Id.                            | Id.        | Id.                              | Id.                                    | Id.                      | Id.  | Variétés du<br>id. et id.<br>Incolore 1/2 longue |
| IX-a              | Tam cạn (me-<br>lange de lign.)                    | Id.  | Id.                            | Id.        | Id.                              | Id.                                    | Id.                      | Id.  | longue   |
| 77-a              | Tam xoan   | Id.  | Id.                            | Id.        | Id.                              | Id.                                    | Id.                      | Id.  | 1/2 longue                                       |
| 547               | Tam muộn   | Du-Lam   | Id.                            | Id.        | Id.                              | Id.                                    | Id.                      | Id.  |  |

## **GRAPHIC NOT REPRODUCIBLE**

PATRONIZED BY THE PROVINCE OF BAC-NINH

| CARACTÈRES DE DESCRIPTION         |                           |          |               |                                 |   |   |              |   |
|-----------------------------------|---------------------------|----------|---------------|---------------------------------|---|---|--------------|---|
| génér.<br>hôte<br>étudié<br>à nom | GRAIN DE RADDY            |          |               | écoloration<br>des<br>glumelles | grain de riz  | Pan-<br>icles   | Observations |   |
|                                   | bec                       | glumes   | longeur<br>mm |                                 |   |   |              |   |
| <b>Ve mois</b>                    |                           |          |               |                                 |   |   |              |   |
| Incon-<br>toires                  | Très<br>peu pro-<br>noncé | Normales | 830           | 281                             | light yell<br>jaune clair                           | Pellicule blan-<br>che, trace<br>versante blanche                       | Normales     | Pigmentations<br>légères sur le<br>corps des<br>glumelles |
| Id.                               | Id.                       | Id.      | 821           | 250                             | Id.   | Id.   | Id.          | Id.   |
| Id.                               | Id.                       | Id.      | 828           | 240                             | Id.   | Pellicule blan-<br>che, quelques<br>petits venticles<br>blancs          | Id.          | Id.   |
| Colorés                           | Id.                       | Id.      | 865           | 281                             | Coloration<br>brune sur<br>fond jaune               | Id.   | Id.          | (1) Plusieurs<br>grains à barbes<br>assez longues         |
| <b>X<sup>e</sup> mois</b>         |                           |          |               |                                 |   |   |              |   |
| Incon-<br>toires                  | Très pro-<br>noncé        | Id.      | 831           | 267                             | Coloration<br>brun foncé<br>sur fond<br>jaune ocre  | Pellicule blan-<br>che, quelques<br>petits venticles<br>blancs internes | Id.          |   |
| Id.                               | Id.                       | Id.      | 817           | 243                             | Id.   | Id.   | Id.          |   |
| Id.                               | Id.                       | Id.      | 849           | 264                             | Coloration<br>brune sur<br>fond jaune<br>or         | Id.   | Id.          |   |
| Id.                               | Id.                       | Id.      | 865           | 260                             | Coloration<br>brune sur<br>fond jaune<br>ocre clair | Id.   | Id.          |   |

CULTURAL CHARACTERISTICS OF THE VARIETIES

| Gen.<br>No. | NAMES<br>of the<br>varieties | NATURE OF THE RICE FIELDS<br>where the variety is cultivated<br>and the extension area  | Quantity of<br>seeds utilized<br>to plant 1 hectare | Duration<br>of the<br>Nursery |
|-------------|------------------------------|---|---|-------------------------------|
| 268         | Cau                          | middle or semi-low r.f., rich or somewhat rich, sandy, sandy or argillaceous clay--Variety cultivated in all Bac-Ninh North and a part of South Bac-Ninh  | 52 kg.  | 60 days                       |
| 269-a       | Cau (mixture<br>of lines)    | id-   | 52 kg.  | 60 days                       |
| 199         | Tep                          | middle and semi-low r.f., quite rich, sandy clay--Variety quite widespread in South-East Bac-Ninh   | 52 kg.  | 60 days                       |
| 109         | Sai duong                    | low or semi-low r.f., rich or very rich sandy clay--Variety introduced by Thai-Binh, susceptible to diffusion in South-East Bac-Ninh  | 54 kg.  | 60 days                       |
| IX-a        | Tam can                      | high and middle r.f., rich or purified type quite rich, sandy or sandy clay Variety cultivated in North Bac-Ninh  | 32 kg.  | 45 days                       |
| IX-a        | Tam can                      | High and middle r.f., rich, sandy mixture of lines or sandy clay. This mixture of lines more esteemed than the purified Tam can type by its more extended grains and its superior commercial quality id. is susceptible to advantageously replace this last one. Cultivated in North Bac-Ninh | id.   | id.                           |
| 77-a        | Tam xoan                     | High and middle r.f., rich or quite rich, sandy or sandy clay--Variety cultivated in North Bac-Ninh   | id.   | id.                           |
| 547         | Tam muon                     | High and middle r.f., sandy or argillaceous, rich or quite rich. Cultivated in the district of Tu-Son and a part of Gia-Lam   | id.   | id.                           |

## GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF BAC-NINH

| Écartement des plantes<br>à repiquage | Nombre de brins par touffe au repiquage | Telage moyen | Hauteur moyenne d'1 mètre | Epoque de semis                  | Epoque de repiquage                        | Epoque de floraison                                  | Epoque de récolte                                     | Rendement à l'hectare (1) |
|---------------------------------------|---|--------------|---------------------------|----------------------------------|--|--|---|---------------------------|
| Ve mois                               |   |              |                           |                                  |  |  |   |                           |
| 0,20-<br>0,23                         | 6 à 7<br>brins                          | 16           | 0,90                      | Fin Octobre                      | Fin Décembre<br>début Janvier<br>fin Avril | Fin Avril<br>début Mai                               | Fin Mai<br>1 <sup>e</sup> quinzaine<br>Juin           | 19 à 22<br>Qx             |
| 0,20-<br>0,23                         | 6 à 7                                   | 16           | 0,90                      | id.                              | id.  | id.  | id.   | 20 à 24<br>Qx             |
| 0,20-<br>0,23                         | 6 à 7                                   | 15           | 0,90                      | id.                              | id.  | id.  | 1 <sup>e</sup> décade<br>Juillet                      | 18 à 21<br>Qx             |
| 0,20-<br>0,23                         | 7 à 8                                   | 15           | 0,95                      | id.                              | Fin Décembre                               | id.  | 1 <sup>e</sup> quinzaine<br>Juin                      | 18 à 22<br>Qx             |
| X <sup>e</sup> mois                   |   |              |                           |                                  |  |  |   |                           |
| 0,23-<br>0,24                         | 6 à 5                                   | 20           | 0,83                      | 2 <sup>e</sup> quinzaine<br>Juin | 1 <sup>e</sup> décade<br>Août<br>Sept.     | 2 <sup>e</sup> et 3 <sup>e</sup> décadées<br>Octobre | 2 <sup>e</sup> et 3 <sup>e</sup> décadées<br>Novembre | 21 à 25<br>Qx             |
|                                       | id.                                     | 22           | 0,85                      | id.                              | id.  | id.  | id.   | 23 à 27<br>Qx             |
|                                       | id.                                     | 22           | 0,92                      | id.                              | id.  | id.  | id.   | 22 à 26<br>Qx             |
|                                       | 16.                                     | 18.          | 0,88                      | id.                              | id.  | id.  | id.   | 22 à 20<br>Qx             |

The indicated yields can be obtained under normal conditions.  
 In practice, they can be inferior or superior in more unfavorable situations or on richer lands.

- 45 -

PLANCHE XI

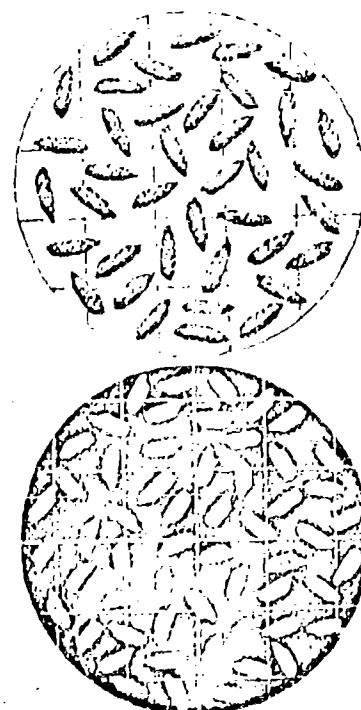
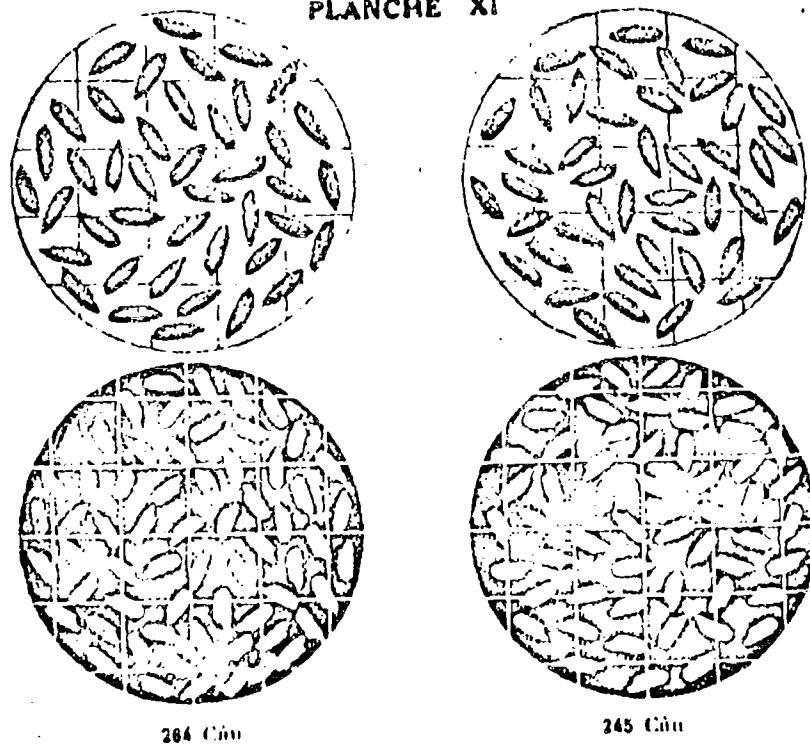
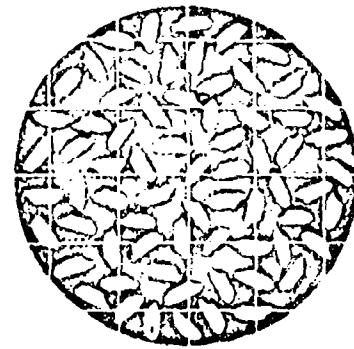
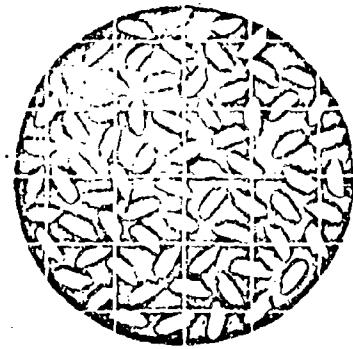
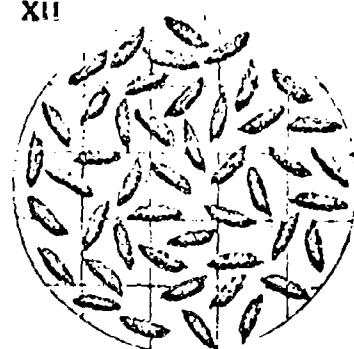
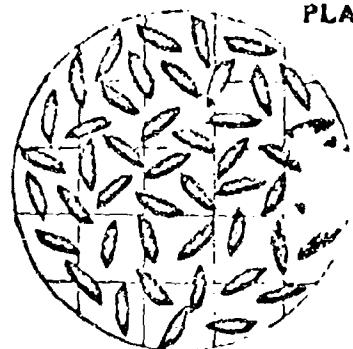
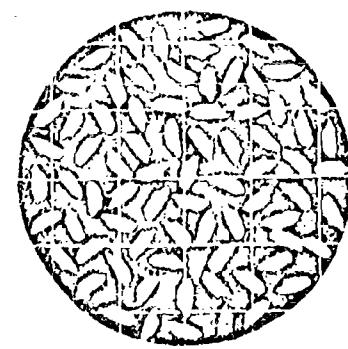


PLANCHE XII



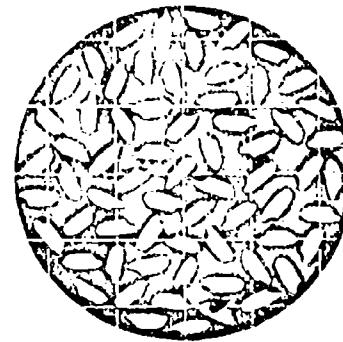
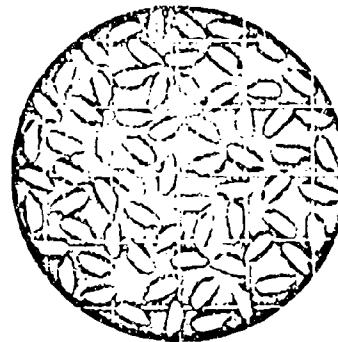
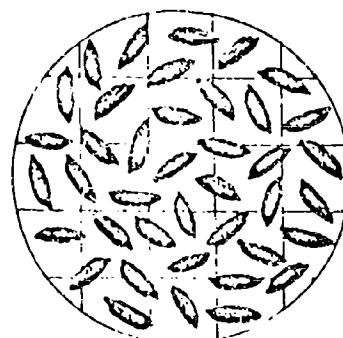
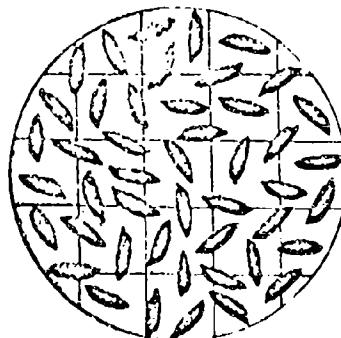
57 Gié

627 Gié hon



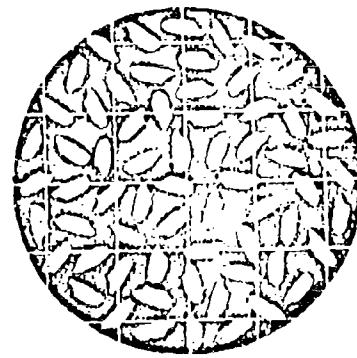
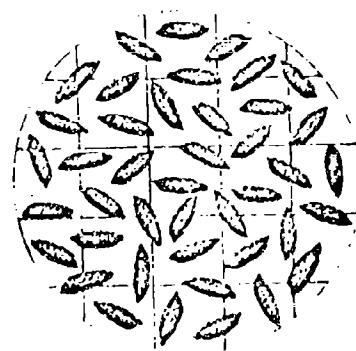
70 a Sénou cùu

PLANCHE XIII



70 b Sperm câu

VII d' Tâm muộn



VII d' Tâm muộn

V

SELECTED AND PATRONIZED VARIETIES FROM THE  
PROVINCE OF BAC-GIANG

---

They are exactly 12 in number.

Varieties of the V month: 4 patronized varieties. Three of them were chosen among 53 purified types originating from 15 local populations (9 different names). The fourth patronized variety is a native of the province of Thai-binh; it showed itself to be superior to the local varieties in the comparative tests.

Varieties of the X month: 6 patronized varieties. They were chosen among 78 purified types originating from 65 local populations (37 different names).

GRAPHIC NOT REPRODUCIBLE  
BOTANICAL CHARACTERISTICS OF THE VARIETIES

| Numéro général     | Noms<br>des variétés | Village d'origine de la population dont est issue la variété sélectionnée | Amidon-neuse ou gluante | CARACTÉRÈS DE CLASSIFICATION |         |                            |                          | Ronde ou 1/2 ronde ou 1/2 longue ou longue |
|--------------------|----------------------|---|-------------------------|------------------------------|---------|----------------------------|--------------------------|--|
|                    |                      |   |                         | Mutique                      | Aristée | Pellicule rouge ou blanche | Gumelles colorées ou non |  |
| <i>Variétés du</i> |                      |   |                         |                              |         |                            |                          |  |
| 204                | Càu                  | Phú-Xuyên   | Amidon-neuse            | Aristée                      | Blanche | Légèrement colorées        | Incolore                 | longue                                     |
| 245                | Càu                  | Maï-Hè  | id.                     | id.                          | id.     | id.                        | id.                      | id.  |
| 258                | Gié                  | Binh-An   | id.                     | id.                          | id.     | id.                        | id.                      | id.  |
| 109                | Sài đường            | Đoan-Túc<br>T. B.   | id.                     | id.<br>(1)                   | id.     | Colorées                   | Coloré                   | id.  |
| <i>Variétés du</i> |                      |   |                         |                              |         |                            |                          |  |
| 57                 | Gié                  | Thịnh-Liệt  | Amidon-neuse            | Aristée                      | Blanche | Légèrement colorées        | Incolore                 | longue                                     |
| 527                | Gié hoa              | Cần-Dinh  | id.                     | id.                          | id.     | id.                        | id.                      | longue                                     |
| 70*                | Sâm càu              | Sơn-Giao  | id.                     | id.                          | id.     | id.                        | id.                      | id.  |
| 70*                | Sâm càu              | Sơn-Giao  | id.                     | id.                          | id.     | id.                        | id.                      | id.  |
| VIII*              | Tâm miộn             | Nam-Xương   | id.                     | id.                          | id.     | Colorées                   | id.                      | id.  |
| VIII*              | Tâm miộn             | Nam-Xương   | id.                     | id.                          | id.     | id.                        | id.                      | id.  |

GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF BAC-GIANG

| CARACTÈRES DE DESCRIPTION |               |             |             |                                      |  |  |   |  |
|---------------------------|---------------|-------------|-------------|--------------------------------------|--|--|---|--|
| GRAIN DE RIZ              |               |             |             | Grain de riz                         | Panicules  | Observations   |   |  |
| dec                       | glumes        | longeur mm. | largeur mm. |                                      |  |  |   |  |
| Peu<br>grosses            | Nor-<br>males | 839         | 262         | Jaune<br>clair                       | Pellicule<br>blanche, petit<br>ventre blanc<br>externe | Nor-<br>males  | Pigmentations<br>légères sur le<br>corps des<br>glumelles           |  |
| Id.                       | Id.           | 824         | 265         | id.                                  | id.  | id.  | id.   |  |
| Id.                       | Id.           | 839         | 260         | id.                                  | id.  | id.  | (1) VARIÉTÉ<br>NOMMÉE<br>BÔNG LÔNG<br>PHÔNG                         |  |
| Id.                       | Id.           | 865         | 281         | PANIQUE DE<br>SÉTACÉ<br>L.056        |  | id.  | (2) VARIÉTÉ<br>NOMMÉE<br>BÔNG LÔNG<br>PHÔNG                         |  |
| Très<br>grosses           | Nor-<br>males | 817         | 253         | Jaune<br>clair                       | Pellicule<br>blanche, trace<br>ventre blanc<br>interne | Nor-<br>males  | LIGNE ÉTA-<br>PE INTÉ-<br>GRALISÉE<br>AUX PÉRIO-                    |  |
| Id.                       | Id.           | 820         | 254         | id.                                  | id.  | id.  | DES   |  |
| Id.                       | Id.           | 782         | 245         | id.                                  | id.  | id.  | id.   |  |
| Id.                       | Id.           | 734         | 254         | id.                                  | id.  | id.  | id.   |  |
| Id.                       | Id.           | 841         | 260         | PANIQUE DE<br>SÉTACÉ<br>NOMMÉE PHÔNG |  | Pellicule<br>blanche, petit<br>ventre blanc<br>interne | Légé-<br>ralement<br>moins<br>serrees que<br>les autres<br>variétés |  |
| Id.                       | Id.           | 807         | 257         | PANIQUE DE<br>SÉTACÉ<br>NOMMÉE PHÔNG |  | id.  | Nor-<br>males   |  |

- 1 / -

GRAPHIC NOT REPRODUCIBLE  
CULTURAL CHARACTERISTICS OF THE VARIETIES

| Numéro<br>Général<br>of the Varieties | Nom<br>des variétés | NATURE DES RIZIÈRES<br>où la variété est cultivée<br>et aire d'extension                            | Quantity of<br>seeds used<br>to plant<br>per hectare of<br>extension | DURATION<br>of the<br>NURSERY |                      |
|---------------------------------------|---------------------|---|--|-------------------------------|----------------------|
|                                       |                     |   |  | Variétés du<br>Nursery        | Variétés du<br>Field |
| 261                                   | Câu                 | Average, rich or quite rich r.f., thick arable bed--Lang-Giang.                                     | 60 kg.   | 60 à 70<br>jours<br>days      |                      |
| 215                                   | Câu                 | average r.f., thin arable bed, poor--Viet-Yen, Yen-The, Hiep-Hoa.                                   | Id.  | Id.                           |                      |
| 258                                   | Gié                 | average r.f. of average richness<br>Poor zone of Lang-Giang, rich<br>zone of Viet-Yen and Yen-Dung. | Id.  | Id.                           |                      |
| 139                                   | Sát đường           | Semi-low or low r.f., quite rich and rich--Lang-Giang and Yen-Dung.                                 | Id.  | Id.                           |                      |
| 57                                    | Gié                 | High, semi-high r.f., average richness or poor--Lang-Giang, Viet-Yen.                               | 55 kg.   | 40 j.                         |                      |
| 527                                   | Gié hoa             | -id-  | Id.  | 40 j.                         |                      |
| 70-a                                  | Sớm câu             | High and very high r.f. of average or poor richness--Viet-Yen, Yen-The, Hiep-Hoa.                   | Id.  | 35 à 40                       |                      |
| 70-b                                  | Sớm câu             | -id-  | Id.  | Id.                           |                      |
| VII                                   | Tam muộn            | Average, quite rich or rich r.f.--Lang-Giang, Hiep-Hoa, Viet-Yen, Yen-The.                          | Id.  | 45 j.                         |                      |
| VII 42                                | Tam muộn            | -id-<br>slightly more productive than Tam muon VII in relatively richer lands.                      | Id.  | 45 j.                         |                      |

## GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF BAC GIANG

| caractéristiques des sols et de la culture | Nombre moyen de brins par touffe au replantage | Surface | Époque de semis | Époque de replantage          | Époque de floraison                 | Époque de récolte                     | Yield (kg/ha)  |               |
|--|--|---------|-----------------|-------------------------------|-------------------------------------|---------------------------------------|--|---------------|
| <b>V° mois</b>                             |  |         |                 |                               |                                     |                                       |  |               |
| 0-20-<br>0,25                              | 3 à 4<br>brins                                 | 10      | 1-05            | Fin Octobre<br>début Novembre | 2 <sup>e</sup> quinzaine<br>Janvier | Fin Avril<br>début Mai                | Fin Juin<br>Début Juillet                            | 10 à 18<br>Qx |
| 0,18-<br>0,20                              | Id.  | 8       | 0,95            | Id.                           | 2 <sup>e</sup> décade<br>Janvier    | Id.                                   | Fin Mai<br>début Juin                                | 10 à 12<br>Qx |
| 0,20-<br>0,22                              | Id.  | 10      | 0,95            | Id.                           | 2 <sup>e</sup> quinzaine<br>Janvier | Id.                                   | Id.  | 14 à 16<br>Qx |
| 0,22-<br>0,25                              | Id.  | 11      | 1,00            | Id.                           | Id.                                 | Id.                                   | Id.  | 18 à 20<br>Qx |
| <b>X° mois</b>                             |  |         |                 |                               |                                     |                                       |  |               |
| 0-20-<br>0,23                              | 3 à 4  | 10      | 1               | Fin Mai<br>début Juin         | 1 <sup>e</sup> quinzaine<br>Juillet | 1 <sup>e</sup> quinzaine<br>Septembre | 1 <sup>e</sup> quinzaine<br>Octobre                  | 12 à 13<br>Qx |
| 0,20-<br>0,23                              | Id.  | 10      | 1,05            | Id.                           | Id.                                 | Id.                                   | 2 <sup>e</sup> décade<br>Octobre                     | 12 à 13<br>Qx |
| 0,20                                       | Id.  | 8       | 0,95            | Id.                           | Id.                                 | 1 <sup>e</sup> décade<br>Septembre    | 1 <sup>e</sup> décade<br>Octobre                     | 10 à 12<br>Qx |
| 0,20                                       | Id.  | 8       | 0,95            | Id.                           | Id.                                 | Id.                                   | Id.  | 10 à 12<br>Qx |
| 0,22-<br>0,25                              | Id.  | 12      | 1,15            | 2 <sup>e</sup> décade<br>Juin | 2 <sup>e</sup> quinzaine<br>Juillet | 2 <sup>e</sup> décade<br>Octobre      | 2 <sup>e</sup> et 3 <sup>e</sup> décades<br>Novembre | 14 à 16<br>Qx |
| Id.  | Id.  | 12      | 1,15            | Id.                           | Id.                                 | Id.                                   | Id.  | 16 à 18<br>Qx |

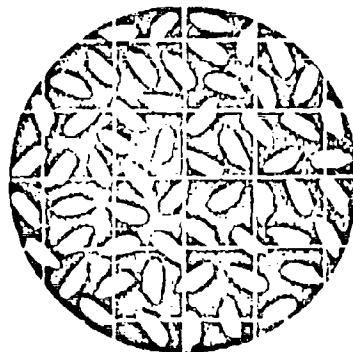
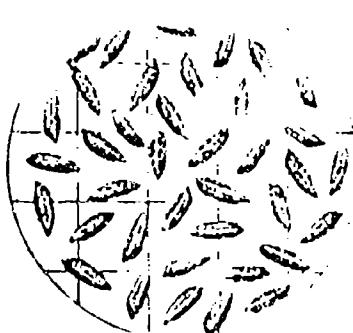
The indicated yields can be obtained under normal conditions.  
 In practice, they can be inferior or superior in more unfavorable situations or in richer lands.

PLANCHE XIV

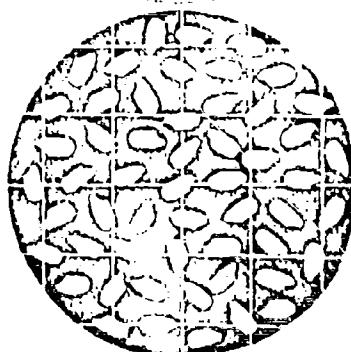
GRAPHIC NOT REPRODUCIBLE



351. Gióng chún.



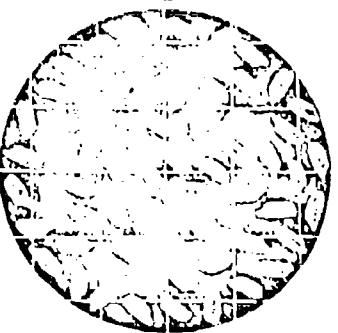
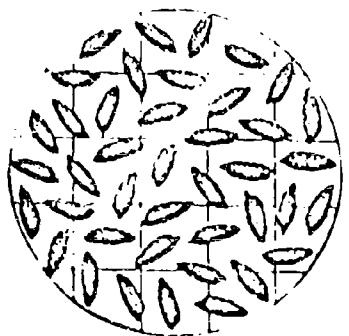
352 a. Chèm chún.



49 Bầu

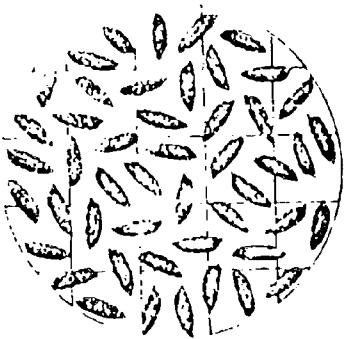
PLANCHE XV

GRAPHIC NOT REPRODUCIBLE



125 Quặng ngô

558 Gạo ngô



125 Quặng ngô

XIIe Ry

VI

SELECTED AND PATRONIZED VARIETIES  
OF THE PROVINCE OF HAI-DUONG

---

They are exactly 8 in number.

Varieties of the V month: 4 patronized varieties. Three of them were chosen among 69 purified types originating from 25 populations which are local (12 different names). The fourth variety is a native of Bac-giang and gave better results than the local varieties in the tests.

Varieties of the X month: 4 patronized varieties. Three of them were chosen among 53 purified types originating from 46 local populations (36 different names). The fourth variety is a native of the province of Hung-yen. Introduced in the tests, it showed itself to be more productive than the local varieties.

GRAPHIC NOT REPRODUCIBLE

BOTANICAL CHARACTERISTICS OF THE VARIETIES

| Numéro<br>général  | NOMS<br>COMMUNS<br>des variétés | Village<br>d'origine<br>de la popula-<br>tion dont<br>est issue<br>la variété<br>selectionnée | CATÉGORIES DE CLASSIFICATION |         |         |                             |                                     |                          |
|--------------------|---------------------------------|---|------------------------------|---------|---------|-----------------------------|-------------------------------------|--------------------------|
|                    |                                 |   | Amidon-<br>neuse             | Mutique | Aristée | Brune ou<br>blanche         | Glu-<br>melle<br>colorées<br>ou non | Apex<br>coloré<br>ou non |
| <i>Variétés du</i> |                                 |   |                              |         |         |                             |                                     |                          |
| 351                | Gluong chiêm                    | Phú-Xuyên<br>P. L. T.   | Amidon-<br>neuse             | Aristée | Blanche | Légère-<br>ment<br>colorées | Incolore                            | 1/2 longue               |
| 261                | Cầu                             | Nam-Sach  | Id.                          | Id.     | Id.     | Id.                         | Id.                                 | Id.                      |
| 198-a              | Chiêm chanh                     | Trảng-Liet  | Id.                          | Id.     | Id.     | Colorées                    | Coloré                              | Id.                      |
| 40                 | Bầu                             | Trảng-Liet  | Id.                          | Id.     | Id.     | Légère-<br>ment<br>colorées | Id.                                 | 1/2 ronde                |
| <i>Variétés du</i> |                                 |   |                              |         |         |                             |                                     |                          |
| 154                | Glu nghè                        | Đô-Sử H. V.   | Amidon-<br>neuse             | Aristée | Blanche | Colorées                    | Incolore                            | 1/2 longue               |
| 558                | Glu nghè                        | Binh-Hà   | Id.                          | Id.     | Id.     | Id.                         | Id.                                 | 1/2 ronde                |
| 123                | Quảng nghè                      | Kinh-Môn  | Id.                          | Id.     | Id.     | Id.                         | Id.                                 | Id.                      |
| XIIe               | Rơ                              |   |                              |         |         |                             |                                     |                          |

GRAPHIC NOT REPRODUCIBLE  
PATRONIZED BY THE PROVINCE OF HAI-DUONG

| génés<br>génét.<br>colo-<br>ïs ou<br>non | CARACTÈRES DE DESCRIPTION |         |        |                                |                                       |  |  |
|--|---------------------------|---------|--------|--------------------------------|---------------------------------------|--|--|
|  | GRAIN                     | DR      | PADDY  | coloration<br>des<br>glumelles | Grain<br>de riz                       | Pani-<br>cules   | Observations   |
| hect                                     | glumes                    | graine  | graine |                                |                                       |  |  |
| <b>9<sup>e</sup> mois</b>                |                           |         |        |                                |                                       |  |  |
| éclaté                                   | Id.                       |         |        | LIGHT YELLOW                   |                                       |  |  |
| colorée                                  | Très pro-<br>nounce       | Normale | 828    | 254                            | Jaune<br>clair                        | WHITE<br>PELICLE,<br>SOME WHITE<br>BODY                  | Normale LIGHT<br>PIGMENTATION<br>ON THE BODY<br>OF THE<br>GLUMELLA |
| M.                                       | Id.                       | Id.     | 839    | 262                            | Id.                                   | Id.  | Id.  |
| blonde                                   | Id.                       | Id.     | 831    | 264                            | Blécher<br>en jaune<br>base           | WHITE<br>PELICLE,<br>SOME SMALL<br>WHITE<br>BODIES       | Id.  |
| Id.                                      | Id.                       | Id.     | 280    | 311                            | LIGHT yellow                          | WHITE PELICLE,<br>SOME WHITE<br>BODIES                   | Id. LIGHT<br>PIGMENTATIONS<br>ON THE BODY<br>OF THE<br>GLUMELLA    |
| <b>X<sup>e</sup> mois</b>                |                           |         |        |                                |                                       |  |  |
| colorée                                  | Très pro-<br>nounce       | Normale | 841    | 273                            | GRAIN<br>EN JAUNE<br>AUTRE BASE       | WHITE<br>PELICLE,<br>WHITE ENTER<br>NAL BODY             | Normale  |
| Id.                                      | Id.                       | Id.     | 830    | 266                            | Id.                                   | Id.  | Id.  |
| Id.                                      | Id.                       | Id.     | 867    | 304                            | Blécher en<br>jaune<br>base           | WHITE<br>PELICLE,<br>SOME BIG<br>WHITE CRISTAL<br>BODIES | Id.  |
| Id.                                      | Id.                       | Id.     | 810    | 284                            | GRAIN jaune<br>en jaune<br>autre base | Very white,<br>PELICLE, TRACE<br>WHITE BODY              | Id.  |

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CULTURAL CHARACTERISTICS OF THE VARIETIES

| Gen.<br>No. | NAMES<br>of the varieties | NATURE OF THE RICE FIELDS<br>where the variety is<br>cultivated and area of<br>extension   | Quantity of<br>seeds used<br>to plant<br>1 hectare | Duration<br>of the<br>Nursery |
|-------------|---------------------------|--|--|-------------------------------|
| 352         | Giong chiem               | High and quite high r.f.,<br>easily drainable, somewhat<br>rich or rich, argilosilici-<br>ous, silico-argilicious, alluv-<br>ial (Tu-Ky, Ninh-Giang,<br>Gia-Loc).  | 35-47 kg.  | 60 to ?<br>days               |
| 264         | Cau                       | High and quite high r.f., rich<br>and quite rich, argilosilici-<br>ous, silico-argilicious, alluv-<br>ial, clayish (Binh-Giang,<br>Chi-Linh, Nam Sach) Variety<br>introduced from Bac-Giang.   | id.  | id.                           |
| 198-e       | Chiem chanh               | High and quite high r.f.,<br>rich and quite rich, argilio-<br>silicious, silico-argillaceous<br>Nearly all of Hai-duong.   | id.  | id.                           |
| 49          | Bau                       | Low, rich and quite rich r.f.<br>argilosilicious, alluvial<br>Nearly all of Hai duong  | id.  | id.                           |
| 154         | Giau nghe                 | High and quite high r.f., rich,<br>somewhat rich or poor, argillo-<br>silicious, silico-argillaceous,<br>clayish, alluvial (Cam-Giang,<br>Nam Sach, Gia-Loc, Thanh-Ha,<br>Binh-Giang, Kim-Thanh, Kinh-<br>Mon, Dong-Trieu) --Variety intro-<br>duced from Hung-Yen, very estimated,<br>susceptible to take a large<br>extension and to avantageously<br>supply local Lua gian. | 35-42 kg.  | 45 to ?<br>days               |
| 558         | Giau                      | Semi-high r.f., argilosilici-<br>ous, alluvial, quite rich.<br>Later than Giau nghe 154 and<br>supports a thicker bed of water.  | id.  | id.                           |
| 125         | Quang nghe                | High, quite high r.f., argillo-<br>silicious, clayish, poor and<br>acid (Binh-Giang, Thanh-Mien)   | id.  | id.                           |
| XII-e       | Ru                        | High r.f., rich or very rich, argilo-<br>silicious, silico-argillaceous (Kinh-<br>Mon, Nam-Sach, Chi-Linh, Dong-Trieu, Kim-<br>Thanh, Thanh-Ha, Tu-Ky, Gia-Loc, Ninh-Giang,<br>Vinh-Bao).  | id.  | id.                           |

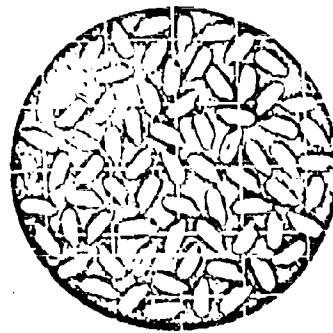
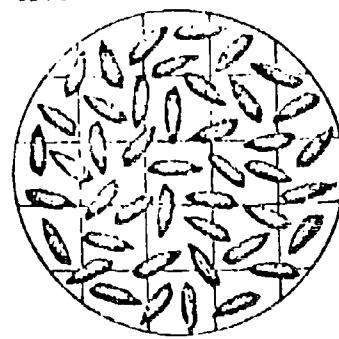
GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF HAI-DUONG

| arête<br>et des<br>tiges<br>repli-<br>quage | Nombre<br>de brins<br>par<br>tonne | Epoque<br>de semis | Epoque<br>de repliage | Epoque<br>de floraison  | Epoque<br>de récolte                                 | Rendements<br>à l'hectare                            |               |
|---|------------------------------------|--------------------|-----------------------|---|--|--|---------------|
|   |                                    |                    |                       |   |  | (1)  | (2)           |
| X molé                                      | 18                                 | 15 à 18            | 15 jours              |   |  |  |               |
| X molé                                      | 18                                 | 15 à 18            | 15 à 18               | 1 <sup>re</sup> quinzaine<br>Janvier  | 2 <sup>e</sup> et 3 <sup>e</sup> décades<br>Avril    | 2 <sup>e</sup> quinz. Juin                           | 22 à 25<br>Qx |
| X molé                                      | 18                                 | 15 à 18            | 15 à 18               | 1 <sup>re</sup> quinz. Janvier  | 1 <sup>re</sup> décade<br>Avril                      | 1 <sup>re</sup> quinz. Juin                          | 20 à 23<br>Qx |
| X molé                                      | 15                                 | 15 à 18            | 15 à 18               | 1 <sup>re</sup> et 2 <sup>e</sup> quinz.<br>Janvier et<br>1 <sup>re</sup> décade<br>Février | id.  | id.  | 18 à 24<br>Qx |
| X molé                                      | 15                                 | 15 à 18            | 15 à 18               | 1 <sup>re</sup> et 2 <sup>e</sup> décades<br>Janvier  | id.  | id.  | 23 à 25<br>Qx |
| X molé                                      | 18                                 | 15 à 18            | 15 à 18               | 2 <sup>e</sup> quinzaine<br>Juillet et 1 <sup>re</sup><br>quinz. Août                       | 1 <sup>re</sup> quinzaine<br>Octobre                 | 1 <sup>re</sup> quinzaine<br>Novembre                | 24 à 32<br>Qx |
| X molé                                      | 15                                 | 15 à 18            | 15 à 18               | 2 <sup>e</sup> quinzaine<br>Juillet   | id.  | id.  | 24 à 27<br>Qx |
| X molé                                      | 17                                 | 15 à 18            | 15 à 18               | 1 <sup>re</sup> quinz. Août<br>id.  | id.  | id.  | 21 à 26<br>Qx |
| X molé                                      | 18                                 | 15 à 18            | 15 à 18               | id.   | 1 <sup>re</sup> et 2 <sup>e</sup> décades<br>Octobre | 2 <sup>e</sup> et 3 <sup>e</sup> décades<br>Novembre | 20 à 34<br>Qx |
| X molé                                      | 18                                 | 15 à 18            | 15 à 18               | id.   | id.  | id.  | 20 à 34<br>Qx |

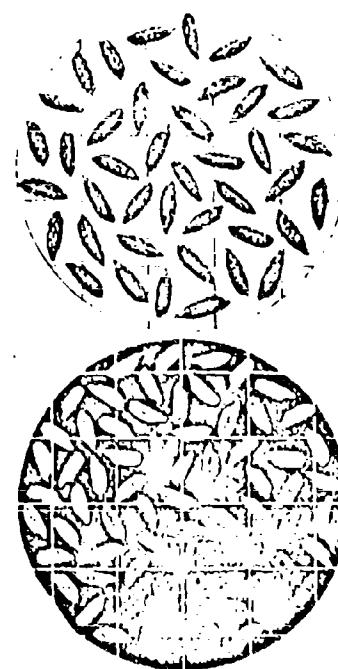
The indicated yields can be obtained under normal conditions. In practice, they can be inferior or superior in more unfavorable situations or in richer lands.

— 6 —  
PLANCHE XVI



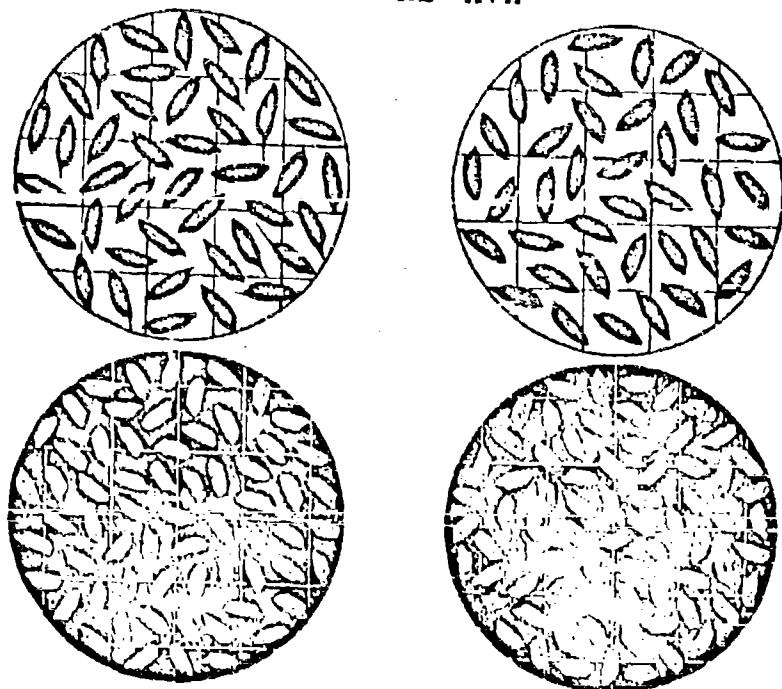
229 Tép Saigon

206 Halphong



234 Chiêm chanh

PLANCHE XVII



III Giảm cao

XI Giảm trắng  
Lignée 12

## VII

### SELECTED AND PATRONIZED VARIETIES FROM THE PROVINCE OF HUNG-YEN

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They are exactly 5 in number.

Varieties of the V month: 3 patronized varieties. Two of them were chosen among 8 purified types originating from 4 local populations(4 different names). The third patronized variety is a native of another province and gave better results than the local varieties in comparative tests.

Varieties of the X month: 2 patronized varieties. They were chosen among 34 purified types originating from 31 local populations (23 different names). One of the varieties is constituted by a line chosen among 50 lines issued from the purified type!

## GRAPHIC NOT REPRODUCIBLE

## BOTANICAL CHARACTERISTICS OF THE VARIETIES

| Numéro<br>Général             | Nom<br>de la<br>variété | Village<br>d'origine de<br>la population<br>dont est issue<br>la variété<br>sélectionnée | CARACTÈRES DE CLASSIFICATION     |                      |                                  |                                 |                          |                                 |
|-------------------------------|-------------------------|--|----------------------------------|----------------------|----------------------------------|---------------------------------|--------------------------|---------------------------------|
|                               |                         |  | Amidon-<br>neuse ou<br>graineuse | Mutique<br>ou barbue | Pellicule<br>rouge ou<br>blanche | Glumelles<br>colorées<br>ou non | Apex<br>coloré<br>ou non | Ronde<br>1/2 ronde<br>ou longue |
| <i>Variétés du<br/>Groupe</i> |                         |  |                                  |                      |                                  |                                 |                          |                                 |
| 229                           | Tép Saigon              | An-Thi   | Amidon-<br>neuse                 | Aristée              | Blanche                          | Légère-<br>ment<br>colorées     | Incolore                 | longue                          |
| <i>Variétés du<br/>Groupe</i> |                         |  |                                  |                      |                                  |                                 |                          |                                 |
| 36                            | Hôphêng                 | Nh-Vong-Hu<br>N. D.  | Id.                              | Id.                  | Id.                              | Id.                             | Id.                      | Id.                             |
| 231                           | Chiêm chanh             | Mg-Ho  | Id.                              | Id.                  | Id.                              | Colorées                        | Coloré                   | Id.                             |
| <i>Variétés du<br/>Groupe</i> |                         |  |                                  |                      |                                  |                                 |                          |                                 |
| 89-h                          | Giòe cao                | Côc-Phong  | Amidon-<br>neuse                 | Aristée              | Blanche                          | Colorées                        | Incolore                 | longue                          |
| XI                            | Giòe trắng<br>lignée 12 | Côc-Phong  | Id.                              | Id.                  | Id.                              | Id.                             | Id.                      | Id.                             |

GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF HUNG-YEN

| CARACTÈRES DE DESCRIPTION |         |          |         |                                       |              |   |
|---------------------------|---------|----------|---------|---------------------------------------|--------------|---|
| GRAIN DE RIZ              |         |          |         |                                       | Grain de riz | Particulars                                 |
| bco                       | grumeau | longueur | largeur | coloration des grumelles              |              | Observations                                |
| 1                         | Normal  | 276      | 271     | Jaune                                 |              |   |
| Peu prononcé              | Normal  | 228      | 272     | Jaune<br>jaune                        | Cormoïde     | jaune (jaune)<br>jaune jaune<br>jaune jaune |
| Id.                       | Id.     | 248      | 271     | Id.                                   | Id.          | Id.   |
| Id.                       | Id.     | 248      | 251     | Coloration<br>brune sur<br>fond jaune | Id.          | Id.   |
| V.R.                      | Normal  | 281      | 282     | Jaune<br>jaune                        | Normal       |   |
| Très prononcé             | Normal  | 281      | 282     | Jaune<br>jaune                        | Normal       |   |
| Id.                       | Id.     | 254      | 238     | Id.                                   | Id.          |   |

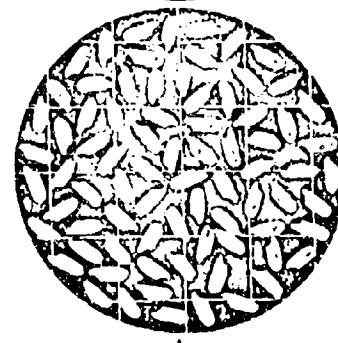
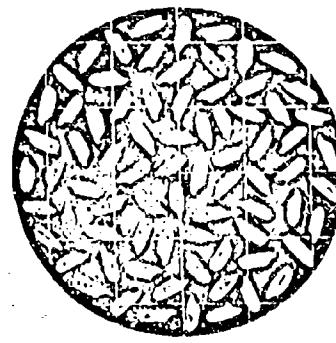
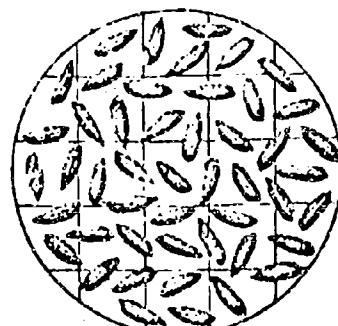
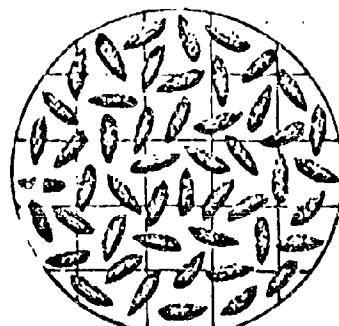
| Numéro<br>général | Variété<br>NOMS<br>des variétés | Nature des rizières<br>où la variété est cultivée<br>et aire d'extension<br>ACCRÉTATION (extension)   | Quantité<br>de semences<br>utilisées<br>pour<br>repiquer<br>1 hectare | Durée<br>de la<br>pépi-<br>nière |
|-------------------|---------------------------------|---|---|----------------------------------|
|                   |                                 |   |   |                                  |
| 220               | Tép Saigon                      | Mediocre land, average richness 70 kg.<br>silico-argillaceous or clayish<br>Kim-dong, An-Thi, Tien-Lu--<br>Variety very cultivated  | 50 à 65<br>jours  | Variétés du                      |
| 300               | Hàiphông                        | Average land or a little deep<br>average richness, silico-argil-<br>laceous--Kim-Dong, An-Thi, Tie-<br>n-Lu--Variety introduced from<br>Ninh-binh.                                    | Id.   | to<br>id.                        |
| 234               | Chiem chanh                     | Middle or low land, quite rich<br>clayish--My-Hao, Yen-My--Var-<br>iety little cultivated, local-<br>ised above all in Hung-Yen North   | Id.   | id.                              |
| 804               | Giau cao                        | Middle land, average richness<br>silicoargillaceous or clayish<br>Khoai-Chau, An-Thi, Kim-Dong,<br>Tien-Lu--Variety susceptible<br>to replace advantageously the<br>local Giau trang. | 60 kg.  | 40 à 45<br>jours                 |
| XI                | Giau trang<br>lignée 12         | Middle land, average richness<br>silicoargillaceous or clayish<br>--Khoai-Chau, An-Thi, Kim-Dong<br>Tien-Lu--Very widespread var-<br>iety.  | Id.   | id.                              |

-60- GRAPHIC NOT REPRODUCIBLE  
PATRONIZED BY THE PROVINCE OF HUNG-YEN

| Nombre de brins par touffe au repiquage | Tillage | Surface en ha | Surface en ha                          | Epoque de semis  | Epoque de repiquage   | Epoque de floraison                        | Epoque de récolte HARVEST                    | YIELD PER HECTARE |            |
|---|---------|---------------|--|--|---|--|--|-------------------|------------|
|   |         |               |  |  |   |  |  | SEMIS             | REP.       |
| <i>HARVESTS</i>                         |         |               |  |  |   |  |  |                   |            |
| 6 à 7 brins                             | 12      | 1 à 60        | 17                                     | 1 <sup>re</sup> quinzaine Novembre                             | 15 Mars<br>1 <sup>re</sup> quinzaine Janvier<br>Mi-Janvier                | Fin Avril<br>1 <sup>re</sup> quinzaine Mai | Fin May<br>Fin June<br>Fin Mai<br>début Juin | 16 à 16           | 16 à 17 Qx |
| Id.                                     | 16      | 5 à 16        | Id.                                    | Id.  | Id.   | Id.  | Début Juin                                   | 14 à 17           | Qx         |
| Id.                                     | 10      | 1 à 10        | Id.                                    | Id.  | Id.   | Id.  | Fin May<br>Fin Mai<br>début Juin<br>Fin June | 14 à 16           | Qx         |
| <i>2nd</i>                              |         |               |  |  |   |  |  |                   |            |
| 3 à 5                                   | 12      | 1, 13         | 1 <sup>re</sup> decade Juin<br>Juillet | 2 <sup>e</sup> et 3 <sup>e</sup> décades Juillet<br>Mi-Juillet | 1 <sup>re</sup> quinzaine Octobre   | 1 <sup>re</sup> quinzaine Novembre         | 21 à 23                                      |                   |            |
| Id.                                     | 11      | 1, 00         | Id.                                    | Id.  | Fin Septembre<br>1 <sup>re</sup> quinzaine Octobre<br>Fin Oct.<br>15 Nov. | Id.  | 20 à 22                                      |                   |            |

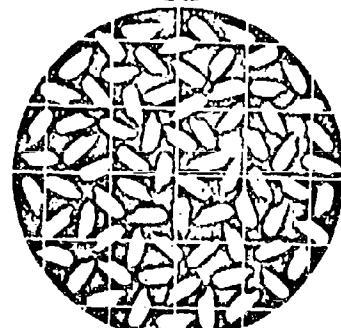
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PLANCHE XVIII



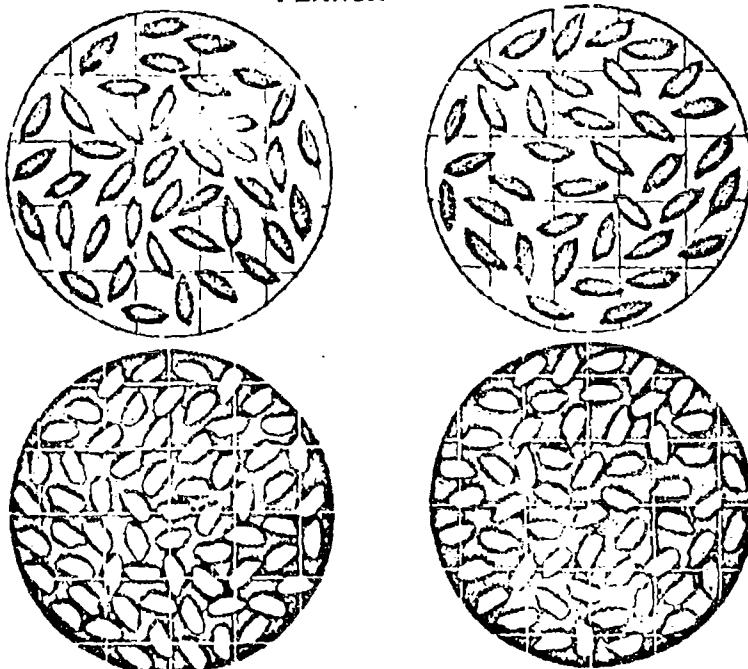
290 Chiêm chanh

278 Tép ou té tép



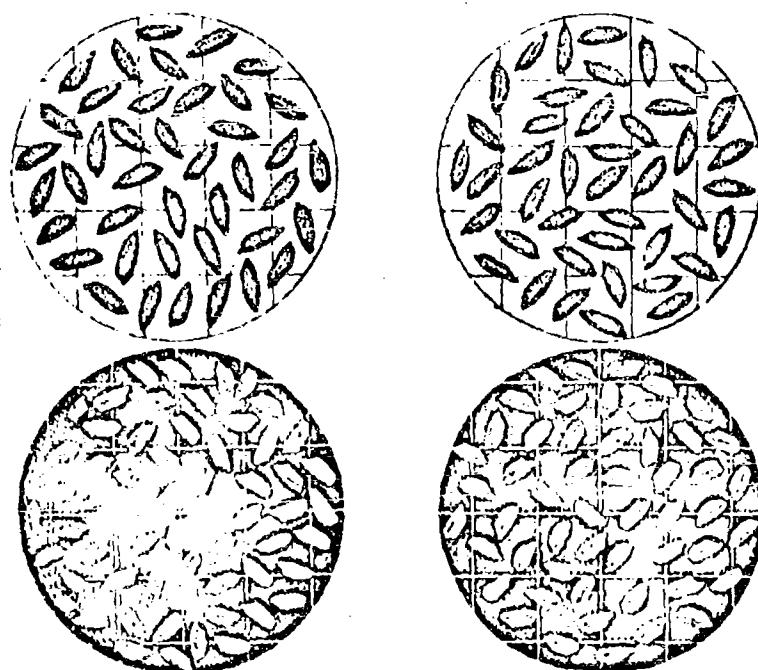
317 Cửu chiêm

PLANCHE XIX



XXIII Giàu mèo

188 a Giàu bát ngo

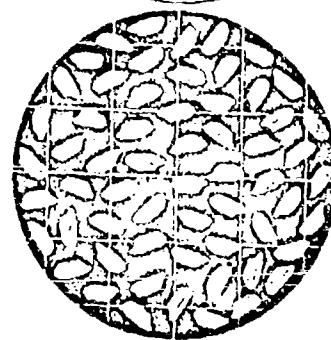
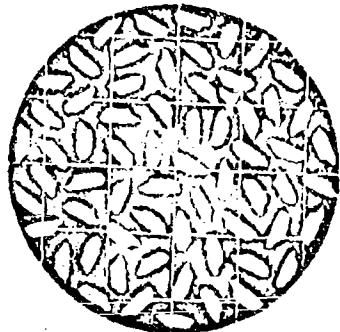
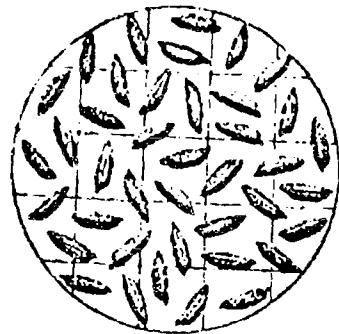


188 b Giàu lát

189 Giàu hến

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PLANCHE XX



XIX a. Giồng trống

XIX c. Chiên trống